

GREATER SAN DIEGO

S&E
EF

SCIENCE &
ENGINEERING
FAIR

gsdsef.org

INFORMATION & EXHIBITOR DIRECTORY

The 65th Annual

Greater San Diego

SCIENCE & ENGINEERING FAIR

March 11-March 17, 2019

BALBOA PARK ACTIVITY CENTER

Sponsored By



Also supported by industry, education, friends of science in San Diego and Imperial counties and nationwide

Welcome to the 65th Annual Greater San Diego Science and Engineering Fair!



2019 GSDSEF Schedule of Events

<p>Tuesday, March 12, 2019</p> <p>Sign In and Project Set Up Day</p>	<p>Project Sign in and Setup Day Balboa Park Activity Center (BPAC)</p> <ul style="list-style-type: none"> • Sign in and set up projects - 1 pm to 7 pm • Bring a foldable chair labeled with their name to use when not speaking to judges, backboard, notebook, and any models. Check website for items that are not allowed. • Sign-up for tours! • Pick up pre-ordered T-shirts. Purchase GSDSEF souvenirs.
<p>Wednesday, March 13, 2019</p> <p>Judging Day</p>	<p>Judging Day – BPAC - 8 am to approx. 2:45- 3 pm, Students/Judges only allowed during judging!</p> <ul style="list-style-type: none"> • <u>ALL</u> Students Exhibitors must be present throughout judging, UNTIL DISMISSED. • Dress in appropriate business-like attire. • Do not forget to bring your lunch! Food is NOT available for purchase and you will NOT be permitted to leave to buy any. No food allowed in the BPAC.
<p>Thursday, March 14, 2019</p> <p>Open to Public Awards Ceremony</p>	<p>Open to Public - 10 am - 3 pm • Admission and Parking are FREE.</p> <ul style="list-style-type: none"> • Student Exhibitors receive free admission to many of the Balboa Park museums and the San Diego Zoo with their exhibitor badge. <p>Student Tours – students signed up and paid in advance.</p> <p>Awards Ceremony – San Diego State Viejas Arena. Parking is free in lot next to Viejas Arena.</p> <ul style="list-style-type: none"> • Doors open at 5:30 pm - Ceremony begins at 6 pm. Food Concessions available!!! • No awards will be announced until the ceremony. ALL students receive an award.
<p>Friday, March 15, 2019</p> <p>Open to Public</p>	<p>Open to Public – 10 am - 3 pm • Admission and Parking are FREE.</p> <ul style="list-style-type: none"> • Student Exhibitors receive free admission to many of the Balboa Park museums and the San Diego Zoo with exhibitor badge. <p>Student Tours – students signed up and paid in advance.</p>
<p>Saturday, March 16, 2019</p> <p>Open to Public</p>	<p>Open to Public – 10 am - 3 pm • Admission and Parking are FREE.</p> <ul style="list-style-type: none"> • Student Exhibitors receive free admission to many of the Balboa Park museums and the San Diego Zoo with exhibitor badge.
<p>Sunday, March 17, 2019</p> <p>Open to Public</p> <p>Family Day</p> <p>Closing and Project Take Down Day</p>	<p>Open to Public - 10 am - 3 pm • Admission and Parking are FREE.</p> <p>Family Day Activities – Presentations, Demonstrations and Hands-On Science.</p> <ul style="list-style-type: none"> • The entire family is welcome to participate in these activities! • Student Exhibitors receive free admission to many of the Balboa Park museums and the San Diego Zoo with exhibitor badge. <p>Project Take-Down – <u>ALL PROJECTS MUST remain on display until 3 pm, NO EXCEPTIONS!</u></p> <ul style="list-style-type: none"> • Project Take Down - 3 pm - 4 pm. • Please bring your exhibitor badge as identification to remove your project. • Note to Exhibitors: When you applied to enter the GSDSEF, you and your parent(s)/guardian(s) agreed to leave your project on display until 3 pm, Sunday, March 19. There are no exceptions to this agreement! You (or your representative) are responsible for removing your project. • NOTE: PROJECTS NOT REMOVED BY 5 pm on Sunday, March 18 will be discarded that evening, unless prior arrangement is made. Notebooks will be emptied and distributed to schools for re-use. If you can't pick your project up, arrange for someone else to do so. Give that person your badge and a note authorizing removal.

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About the Greater San Diego Science & Engineering Fair



Our Mission

To provide a forum encouraging young minds in their independent research in science, technology, engineering, and mathematics - and inspiring the next generation of scientific thought, discovery, and innovation.



This year, the GSDSEF is celebrating its 65th Annual Science & Engineering Fair. The GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR (GSDSEF) started planning for its first Science Fair in 1954, and since then has provided an inspiring experience in science and engineering for thousands of San Diego and Imperial County students, motivating them to pursue careers in science, technology, engineering, and mathematics. We provide a regional competition that challenges students to go beyond classroom studies to do independent research – to ask compelling questions, design and implement innovative solutions, and present and defend results to judges who are professionals in their fields.

The GSDSEF students' STEM achievements showcase how young minds can make an impact in the present and future. *...Inspirational...motivational...transformative...* For over 65 years, the GSDSEF has been encouraging young minds in their pursuits that will define the next generation of scientific thought, discovery, and innovation.

Who May Participate in the GSDSEF

Any student in grade 7 through 12 who attends public, private, parochial or home schools in San Diego County or Imperial County may enter a project for screening and a possible invitation to the GSDSEF. This year we are having a Sixth Grade Showcase. Although they are not being judged this year, they will be recognized at the Awards Ceremony for their participation.

Awards and Benefits of Participating in the GSDSEF

- The most important benefit for all student exhibitors is the opportunity to display their projects, meet with other exhibitors and share projects and results with professional scientists.
- A certificate of merit is given to each exhibitor in recognition of his/her efforts.
- Exhibitors are given opportunities to attend special scientific tours and several Balboa Park museums during Science Fair week.
- First, second, third and fourth place ribbon awards are given for projects in each category in both Senior and Junior Divisions.
- Four Senior and Four Junior Division Sweepstakes Runners-up receive cash awards.
- Four Junior Division Sweepstakes winners receive cash awards.
- Six to eight Senior Division Sweepstakes projects are awarded. Four Senior Division Sweepstakes projects receive college scholarship awards and the opportunity to compete in the INTEL International Science and Engineering Fair (ISEF) in May 2019 in Phoenix, Arizona. One Senior Division Sweepstakes winner receives a scholarship from AFCEA.
- Engraved plaques are given to all Sweepstakes winners, alternates and runners-up.
- Other awards, presented to student exhibitors individually on stage, include: Fred H. Rohr Memorial Award, Reuben H. Fleet Memorial Award, Mickey Award, Ronald Domb Memorial Award, Professional Engineers in California Government Scholarships, BD Awards, San Diego Zoo Global Award, and the Student Leadership Board Awards.
- 60 Professional Societies provide over 150 special awards and/or scholarships.
- Junior and Senior Division Teacher of the Year Awards are selected among nominations made by science fair participants and are given a cash award provided by the Barbara Friedman Foundation.

There are four main divisions in the GSDSEF:

Junior Division Life Sciences (Grades 7— 8); Junior Division Physical Sciences (Grades 7—8)
Senior Division Life Sciences (Grades 9—12); Senior Division Physical Sciences (Grades 9—12)

Our 16 Project Categories

- | | | |
|----------------------------------|--|---|
| • Animal Sciences | • Engineering – Electrical and Mechanical | • Medicine and Health |
| • Behavioral and Social Sciences | • Engineering – Energy and Transport | • Microbiology |
| • Biochemistry | • Engineering – Materials and Bioengineering | • Physics and Astronomy |
| • Chemistry | • Environmental Sciences and Management | • Plant Sciences |
| • Computer Science | • Mathematical Sciences | • Product Testing/Consumer Science (Junior Division Only) |
| • Earth and Planetary Science | | |

Special Recognition and Thanks

The Board of Directors and the Management Committee would like to thank the following individuals, groups and organizations for contributing time, talent, financial support, in-kind support and volunteers to our Science Fair.

Sponsors

BD

San Diego Union Tribune
PECG (Professional Engineers in California Government)
SeaWorld San Diego
San Diego County Office of Education
Reuben H. Fleet Science Center
Hologic Zable Foundation
General Atomics Sciences Education Foundation
Barbara Friedman Family Foundation
Sony Playstation
AFCEA
San Diego Taiwanese Cultural Center
Qualcomm
UTC Aerospace Systems
ONR (Office of Naval Research)
Viasat
Takeda California
San Diego Zoo Global Wildlife Conservancy Friends of Science
San Diego City Parks and Recreation
Friends of San Diego

The GSDSEF is an Affiliate of the following: Intel International Science and Engineering Fair, Broadcom Masters and the California Science and Engineering Fair



Area Merchants, Businesses, Community Organizations

Balboa Park Activity Center
BD Volunteers
Copy-It Printing
ONR (Office of Naval Research) Volunteers
Raphael's Party Rentals
San Diego Zoo Global-Education Department
San Diego State University, Viejas Arena
San Diego State University, Parking and Traffic
Tu's Printing & Graphics
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GSDSEF Management Committee 2018 - 2019

Awards & Awards Ceremony

Sam Ferguson, *USD*
Jelen Rodecker

Awards Fleet Report

Chair: Phil Gay
William Proffer, *Leidos*

Web Development & Technology

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Chair/Developer: Dale Clarke, *Intuit*
Douglas Smith, *Leidos*
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True Xiong, *Sony Playstation*
Donna Spevack

Gift Shop

Jessica Ullyot, *Gompers Charter*

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Jelen Rodecker
Donna Spevack
Dr. Mark Atkins, editor: *The Science fair Experience*

Historians

Chair: Don Pankau, *retired engineer*
Douglas Smith, *Leidos*

Hospitality

Wendy Gay

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Coordinator: Larry Nordell, *Marine Tech Soc.*
Coordinator: Vickie Driver, *Zim Biosciences*
Dr. Annalese Kapteina, *MD*
Dr. Peter Salamon, *UCSD*
Dr. Donna Kritz-Silverstein, *UCSD*

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Chair: Kevin Guentner, *Estate Services*
Chair: Chris Guentner

Parking & Traffic

Chair: Dr. James Kuo, *Athena Bioventures*
Dr. Geraldine Kuo, *Athena Bioventures*

Professional Societies

Chair: Adina Sobo, *Morse High School*
Sejal Pabari

Project Advice & eMentoring

Chair: Dr. Mark Atkins, *Ace Parking*

Project Size & Safety

Chair: Hal Slater

School Relations

Chair: Wendy Gay
Co-Chair: Steve Rodecker
Liaison SDCOE: John Spiegel
Liaison ICOE: Janet Estrada
Liaison Diocese: Julia Cantillion

Student Scientific Tours

Chair: Maria Pankau
Don Pankau

Screening

Coordinator: Rose Armour
Dr. Donna Kritz-Silverstein, *UCSD*

Scientific Review Committee

Chair: Phil Gay, Wendy Gay
Steve Rodecker, *SDSEA*

Student Leadership Board (formerly SAB)

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Rachana Madhukara, *VP Media/Comm*
Julia Situ, *VP Outreach*
Ananya Rao, *Secretary*
Ken Lew, *Treasurer*

Volunteer Coordinating

Chair: True Xiong, *Sony Playstation*
Ken Lew, *Qualcomm*

Website Design & Maintenance

Designer: Dale Clarke, *Intuit*
Jelen Rodecker
Douglas Smith, *Leidos*
William Proffer, *Leidos*

✧

The Board of Directors and Management Committee members are volunteers who give their time and expertise to produce the Greater San Diego Science & Engineering Fair.



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Elizabeth Thacker
Emily Tianshi
Vivek Vijayakumar
Macey Yang

The Student Leadership Board (SLB) is the Fair’s Student Honor Society. We:

- actively participate in the planning of the Fair at monthly meetings during the year
- plan and present Science Fair “How To” workshops for student exhibitors throughout the year (four this year!)
- help design the current year’s T-shirt logo
- assist with many aspects of the Fair itself, including setup/teardown, check-in, project size and safety check
- plan, conduct, and oversee Family Science Day activities

The SLB is a great place for students of all backgrounds to come together and enjoy science, technology, engineering and mathematics while polishing their leadership skills.

More about SLB? Find us at the Fair (we wear cool T-Shirts) or email us at gsdsefslb@gmail.com

AWARDS CEREMONY

March 14, 2019 – San Diego State University Viejas Center

Presenting Sponsor: BD

PROGRAM

- 5:30 pm – Viejas Arena will open for the Awards Ceremony, *Food Concessions will be available*
- 5:30 pm – Professional Societies Awards passed out and listed on screen
- 6:00 pm – National Anthem, Pledge of Allegiance, Opening and Announcements
- 6:15 pm – Keynote Speaker: Robert Sobie, BD
- 6:20 pm – Presentation of Special Awards
Presentation of Categorical Place Awards
Presentation of Sweepstakes Awards

Special Acknowledgements and Appreciation

City of San Diego Parks & Recreation

Herman Parker, Dir. of Parks & Recreation
Berenecé Mora, Recreation Ctr Director
Brett Stanley, Asst Center Director, BPAC
Vicki Hara, Area Manager



Viejas Arena, SDSU

Aaron Woods

Photography

Elizabeth Traugher

Balboa Park Activity Center (BPAC)

John Gascon
Latece Foster



Directory Cover Design/SDUT AD:

Donna Spevack

The Balboa Park Rangers

John Anderson
Balboa Park Rangers

Directory

Jelen Rodecker

SPECIAL RECOGNITION

Morse High School JROTC Color Guard, who participates at the Awards Ceremony
Morse High School Hungry Tiger Restaurant for their catering services during Fair week

***Our gratitude
to the volunteers who help in
countless ways to produce the
65th Annual GSDSEF!***



**If you would like to
volunteer, sponsor the Fair,
or donate money, please go
to www.gsdsef.org**

Special Appreciation to

***A. Dale Clarke, of Intuit, for volunteering many, many hours to create and
develop the online screening and application.***

*

Emile Davis, of BD, for his tech expertise for the Awards Ceremony presentation.

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How Projects are Invited to Participate in the GSDSEF

After participating in their school or district-level science fairs, top projects are then recommended to go through the GSDSEF screening process. Students create a 10-slide digital presentation which is screened by professionals from the science, engineering, technology, and education fields. Projects that are “recommended” are invited to participate in the GSDSEF. In 2019 approximately 750 students submitted their project for screening and screeners spent a hundred hours or more each reviewing presentations for uniqueness and adequate scientific method/engineering design principles.

Who Judges the GSDSEF



At the GSDSEF, nearly 400 judges from the science and education communities evaluate projects and interview students to determine place awards. These judges are scientists, engineers, technology experts, university professors, specialists and retired educators – the majority of whom have doctorates, masters, or bachelor degrees in their respective fields. Additionally, sixty professional societies and organizations provide more than 150 special awards and scholarships. The Judges for Sweepstakes Awards have 5 or more years of science fair judging experience.

How Projects are Judged for Category Awards:

The GSDSEF projects are judged by Standards aligned with the INTEL International Science and Engineering Fair and Broadcom Masters.

1. Creativity –

Originality of problem, uniqueness of approach. The handling and interpretation of data should be commensurate with the grade level of the student. Ingenious use of equipment and materials is considered without regard to the cost involved.

2. Scientific Thought/Engineering Goals –

Scientific Thought: The project shows evidence of depth of study and effort in employing scientific procedures in the solution of a clearly defined problem including study of background, organized procedures, appropriate sampling, orderly recording and analysis of data and the formulation of logical conclusions. Engineering Goals: The project has a clear objective relevant to the needs of the potential user. The product or process has been tested and is workable and economically and ecologically feasible.

3. Thoroughness –

The study is complete within scope of the problem. Scientific literature has been searched and experiments have been repeated and careful records have been kept.

4. Skill –

Credit is given for special skills needed for the construction or use of equipment and for mathematical, computational, and observational and design skills.

5. Clarity –

The purpose, procedures, and conclusions are clearly explained orally and through a display. The project notebook is well organized, neat and accurate. Sources of ideas, data and assistance are clearly identified.

6. Teams –

The tasks and contributions of each team member are clearly outlined and both team members are familiar with all aspects of the project. The final work reflects the coordinated efforts of both team members.

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The GSDSEF Board of Directors and Management Committee would like to give a special recognition and thank you to the screeners who spend many hours reading hundreds of digital projects and taking the extra time to write comments to the students... to the judges who take the time out of their busy schedules to listen and talk to students, share their own passion for science and engineering, and encourage these talented young minds in their pursuits to be the next generation of scientific and technological discovery and innovation! ...AND to the teachers, students, and parents! Without all of your efforts, participation, and dedication there would be no fair !



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Professional Society and Recognition Awards

Each Professional Society or Organization determines their own judging standards based on their organization's criteria and award projects accordingly. They provide more than 150 special recognition awards and scholarships to students totaling over \$25,000. Professional Societies and Organizations may choose for GSDSEF to distribute awards and scholarships or they may choose to award students at their society's board meetings or banquets.

- American Chemical Society, San Diego Section
- American Institute of Aeronautics and Astronautics - San Diego Section
- American Society for Non Destructive Testing (San Diego Section)
- American Society of Civil Engineers
- American Society of Heating, Refrigerating, & Air Conditioning Engineers
- American Society of Materials International, San Diego Chapter
- American Society of Mechanical Engineers
- American Statistical Association, San Diego Chapter
- Armed Forces Communications and Electronics Association
- Association for Women in Science San Diego Chapter
- Becton Dickinson
- Biophysical Society
- Building Industry Association Cares
- California Academy of Nutrition and Dietetics, San Diego District
- California Association of Professional Scientists
- California Environmental Health Association - Southwest Chapter/County of San Diego, Department of Environmental Health
- California School Nurse Organization: San Diego/Imperial Section
- Fred H. Rohr Award from Collins Aerospace
- Friends of Famosa Slough
- General Atomics Sciences Education Foundation
- Health Physics Society (San Diego Chapter)
- Hillcrest-Mission Valley Lions Club
- Institute of Electrical and Electronics Engineers
- Journal of Youths in Science (JOURNYS), Scripps High School Branch
- Kaiser Permanente
- Marine Technology Society
- Price-Pottenger Nutrition Foundation
- Professional Engineers in California Government
- San Diego Astronomy Association
- San Diego Audubon Society
- San Diego Chapter of the Human Factors And Ergonomics Society
- San Diego County Dental Society
- San Diego County Optometric Society
- San Diego County Pharmacists Association
- San Diego County Water Authority
- San Diego for Science
- San Diego Post of the Society of American Military Engineers
- San Diego Psychological Association
- San Diego Science Educators Association
- San Diego Section of the International Dark Sky Association
- San Diego Shell Club
- San Diego Society of Health-System Pharmacists
- San Diego Zoo Global
- Scripps Institute of Oceanography Climate Science Award
- Scripps Research
- Sea World
- Sigma Xi: The Scientific Research Honor Society (San Diego Chapter)
- Society for the Advancement of Material and Process Engineering
- Society of Fire Protection Engineers, San Diego and Inland Empire Chapter
- Society of Toxicology: Southern California Regional Chapter
- Society of Women Engineers - San Diego County Section
- SPAWAR
- The City of San Diego's Environmental Services Department
- The Ron Orta Excellence in Biomedical Research Award
- Torrey Pines Docent Society
- United States Air Force
- United States Navy / Office of Naval Research
- WasteReuse Association - San Diego Regional Chapter

*The following **Special Awards and Recognition** are presented on stage during the Awards Ceremony:*



Becton Dickinson Award for "Advancing the World of Health"
 Fred H. Rohr Award
 Mickey Award
 Office of Naval Research
 Professional Engineers in California Government Scholarships
 Ronald Domb Memorial Award
 Reuben H. Fleet Memorial Award
 Student Leadership Board (SLB Awards)



Arthur Friedman Memorial Science Fair Teachers of the Year: Junior Division and Senior Division

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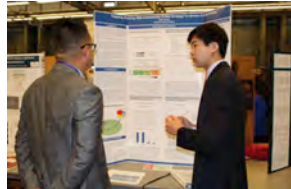
ORGANIZATIONS PROVIDING JUDGES TO THE 65th ANNUAL GSDSEF

The GSDSEF thanks the following companies, organizations, and schools for providing judges:

ABC Pediatrics	Golden West Solar	Ramona Research
AIPG	Grossmont Hospital	Resolute Therapeutics
Alliant International University	Haley & Aldrich, Inc	SAIC
American Incite	Halozyme, Inc	Salk Institute
Apricus Biosciences, Inc.	Hewlett Packard	SAMPE
Aptima	Hillcrest Internal Medicine	San Diego Audubon
Asamoto Engineering Consulting	HI-Q Environmental Products Co, Inc.	San Diego City College
Athena Bioventures	Hologic, Inc.	San Diego County Sheriff's Crime Lab
Aviva	Illumina	San Diego Gas and Electric
Awen Labs	Infrastructure Engineering Corporation	San Diego Jewish Academy
BAE Systems	Innovative Machinery Sales, Inc.	San Diego State University
Bailey Environmental Associates, LLC	Inova Diagnostics, Inc.	San Diego Zoo
Banck Clinical Research Center	Intertek Pharmaceuticals	Scripps Institute of Oceanography
Bastyr University California	Intuit Inc.	Scripps Research Institute (TSRI)
Becton Dickinson	Irvine Scientific	SDMC
Beckman Coulter	Islamic School of San Diego	Signet Accel
BEWiSE	J. Craig Venter Institute	Softcomm
Big Block Realty	JPL	Solar Turbines
Blue Path Solutions	JTY Tech	Sony Interactive Entertainment
Booz Allen Hamilton	JWT Worldwide	Southwest Fisheries Science Center
BRIEF	Kennedy/Jenks Consultants	Southwestern
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CALTROP	Latham & Watkins LLP	SunPower
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DAS	NOAA Fisheries	UC San Diego School of Medicine
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G2 Software Systems	Qualcomm, Inc.	Zim Biosciences
General Atomics Aeronautical Systems	QUASAR Federal Systems	Zova Systems, LLC
Genentech, Inc	Rady's Children Hospital	

Thank you to those who continue to support students and science and engineering education by judging at the Fair:

- Retired engineers, professors, scientists, medical doctors, researchers, and programmers from Janssen Research, University of Minnesota, Honeywell, Kaiser, Hewlett Packard, SAIC, SDSU, US Navy, UCSD, and other companies and organizations.
- Retired educators from El Cajon Valley School District, Escondido Union School District, Sweetwater Union High School District, San Diego City Schools, Grossmont Union School District, and the San Diego Jewish Academy.



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HIGHLIGHTS from the 2018 GSDSEF



- Over 800 students submitted their 10-slide digital presentation of their projects to be screened into the fair.
- More than 600 students were recommended to participate in the fair.
- 10 Screeners and 300+ judges reviewed projects, interviewed student-exhibitors, and decided on awards
- Over 60 Professional Societies who gave Special Awards and/or scholarships

Category Awards:

- **Junior Division:** 112 First Place, 137 Second Place, 152 Third Place, 50 Fourth Place
- **Senior Division:** 41 First Place, 31 Second Place, 20 Third Place Awards. 3 Fourth Place

Special Awards:

- 89 who qualified for the California Science and Engineering Fair
- 4 Senior Division students who went to the INTEL International Science and Engineering Fair (ISEF) in Pittsburg, PA.
- 60 Junior Division Students who were eligible for the Broadcom Masters competition
- 150+ Special Awards totaling over \$10,000 from Professional Societies and Organizations

HIGHLIGHT RESULTS FROM AFFILIATE FAIRS

GSDSEF Results at the California Science and Engineering Fair (CSEF) 2018

934 students from 397 schools statewide participated at the CSEF in April, 2018. GSDSEF had 89 participants with 33 Categorical Award project winners. The CSEF awards the top four projects within each subject category and each age division as First Place, Second Place, Third Place, and Fourth Place. One project, and only one project, receives each award — there are no ties. Category Award winning projects receive the following cash awards. Team project cash awards are divided equally among each team member.

<u>Category</u>	<u>Jr. Div</u>	<u>Sr. Div</u>
First Place	\$250	\$500
Second Place	\$125	\$250
Third Place	\$75	\$125
Fourth Place	\$50	\$75

Category Place Awards won by GSDSEF Students:

- Junior Division: 0 First Place, 3 Second Place, 3 Third Place, 2 Fourth Place, 9 Honorable Mention
- Senior Division: 2 First Place, 2 Second Place, 2 Third Place, 3 Fourth Place, 6 Honorable Mention

Special Awards/Recognition Awards:

- Project of the Year, Senior Division, \$5000: Maggie Chen, Gr. 12, Canyon Crest Academy
- Cheryl Saban Self-Worth Foundation Scholar, Senior Division Award, \$1500: Maggie Chen, Gr. 12, Canyon Crest Academy
- Herbalife Nutrition Award, Senior Division, \$1500: Philippe Hansen- Estruch, Gr. 12, Canyon Crest Academy
- Past Chairpersons' Humanitarian Award, \$1250 Junior Division, \$1250: Haya M. Belbese, Gr. 7, Islamic School of SD
- Southern California National BioGENEius, Senior Division, \$1,250 and the opportunity to participate in the International BioGENEius Challenge: Maggie Chen, Gr. 12, Canyon Crest Academy
- California Shore and Beach Preservation Association Best Coastal Science Awards, Junior Division, \$250 and membership in ASBPA: Aaron McKeeman, Gr. 8, Coastal Academy
- Center for Plant Cell Biology Awards, 1st Place, Senior Division, \$500: Alina V. Pollner, Gr. 10, Canyon Crest Academy
- Clinical Chemistry Awards, Senior Division, Biochemistry/Molecular Biology \$200: Allen Huang, Gr. 11, Canyon Crest Academy
- SoCalBio R&D Scholar Awards, Honorable Mentions: Allen Huang, Gr. 11, Canyon Crest Academy, Julia Situ, Gr. 11, Canyon Crest Academy, and Maggie Chen, Gr. 12, Canyon Crest Academy
- UCLA Brain Research Institute Awards, Senior Division, 3rd Place, \$50: Eden Z. Deng, Gr. 11, Canyon Crest Academy

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Broadcom MASTERS Results:

Broadcom MASTERS® (Math, Applied Science, Technology and Engineering as Rising Stars), is the premier middle school science and engineering fair competition. In 2018, 2,537 middle school applicants from 48 states, 2 US Territories, 1 Department of Defense School competed at the national level. GSDSEF nominated 60 students for Broadcom MASTERS.



Top 300 Finalists from the GSDSEF:

- ◆ Kian Chakamian, Gr. 7, The Rhoades School
- ◆ Adrian Derderian, Gr. 8, Escondido Christian School
- ◆ Jasmine Elasaad, Gr. 8, The Rhoades School
- ◆ Anusha Kadiyala, Gr. 8, Bernardo Heights MS
- ◆ Atulya Mandyam, Gr. 8, Mesa Verde MS
- ◆ Rohan Murali, Gr. 7, Nazareth Catholic School
- ◆ Blake Scurry, Gr. 8, Thurgood Marshall MS
- ◆ Ziyad Soliman, Gr. 8, Islamic School of SD

INTEL International Science and Engineering Fair (ISEF):

Nearly 1800 students from 75 countries and across the United States and its territories participated in the INTEL ISEF in Pittsburgh, PA from May 13 - May 18, 2018. Congratulations to the 2018 Greater San Diego Science & Engineering Fair Sweepstakes Award winners: Philippe Hansen-Estruch, Rachana Madhukara, Alina Pollner, and Ronak Roy who represented the GSDSEF at the Intel ISEF in Pittsburgh, PA. They earned several major awards!

GRAND AWARDS:

Indo-U.S. Science & Technology Visit to India Award: Ronak Roy, Canyon Crest Academy

CATEGORICAL AWARDS:

BIOMEDICAL AND HEALTH SCIENCES:

Second Award of \$1,500: Philippe Hansen-Estruch, Gr. 12, Canyon Crest Academy

BIOMEDICAL ENGINEERING:

Intel ISEF **Best of Category Award** of \$5,000: Ronak Roy, Gr. 11, Canyon Crest Academy

First Award of \$3,000: Ronak Roy, Gr. 11, Canyon Crest Academy

MATHEMATICS:

Fourth Award of \$500: Rachana Madhukara, Gr. 10, Canyon Crest Academy



SPECIAL AWARDS:

American Mathematical Society, Second Award of \$1,000: Rachana Madhukara, Gr. 10, Canyon Crest Academy

REGENERON TALENT SEARCH

The Regeneron Science Talent Search is the nation's oldest and most prestigious science and math competition for high school seniors. The TOP 40 finalists will travel to Washington, D.C. from March 7-13, 2019

REGENERON TOP 300 from the GSDSEF

Huang, Allen, Gr. 11, Canyon Crest Academy

Roy, Ronak, Gr. 11, Canyon Crest Academy

Situ, Julia, Gr. 11, Canyon Crest Academy



The Regeneron TOP 40 finalists will travel to Washington, D.C. from March 7-13, 2019 where they will undergo a judging process and compete for more than \$1.8 million in awards. They will also have the opportunity to interact with leading scientists, meet with members of Congress and display their projects at the National Geographic Society on March 10. The finalists are each awarded at least \$25,000, and the top 10 awards range from \$40,000 to \$250,000.

REGENERON TOP 40 from the GSDSEF

Roy, Ronak, Gr. 11, Canyon Crest Academy

Situ, Julia, Gr. 11, Canyon Crest Academy



GSDSEF Student Exhibitors Tour Opportunities

San Diego Zoo "Inside Story Tour"

Friday, March 15, 2019 * 9:15 am – 12:30 pm * Cost: \$10.00 per student-exhibitor

We will depart from the front of the Balboa Park Activity Center (the Science Fair building) at 9:15 am. Students will be escorted by certificated teachers/chaperones. We will walk to the Zoo entrance where we will meet our Zoo Professional Educator Guides. The tour will include a bus ride with behind-the-scenes stops not open to the general public. The tour concludes at 12:00 pm, we will then walk back to the activity center for dismissal.



Under Pressure Tour - Private, Live Science Demonstration – 25 students minimum

Friday, March 15, 2019 * 11:15am – 3:30pm * Cost: \$15.00 per student exhibitor

We will depart from the BPAC at 11:15am. Students will walk to the Fleet Center for our special presentation **Under Pressure**. Students will be able to visit exhibits afterwards. We will return to the activity center for dismissal at approximately 3:30pm.

Education Tour - Exhibits, I-Max film "Dream Big" and special exhibit "Pause-in-Place"

Thursday, March 14, 2019 * 10:00am – 1:00pm * Cost: \$10.00 per student exhibitor

We will depart from the Balboa Park Activity Center at 10:00am. Student will be escorted by certificated teachers/chaperones. We will go directly to the theater to watch "Dream Big" then have time afterwards for the exhibits and Pause-in-Place. We will return to the activity Center for dismissal at approximately 1:00pm.

**San Diego Air and Space Museum Restoration/Basement Tour
18 students maximum**

Thursday, March 14, 2019 * 10:15 am – 1:30pm * Cost - \$15.00 per student exhibitor

We will depart the Balboa Park Activity Center at 10:15 am. Students will walk to the museum for an 11:00am tour of the restoration center and see how the museum exhibits are re-engineered for safe and optimum display. The tour will last two hours. We will return to the BPAC for dismissal at approximately 1:30pm.



Science Fair Students Enjoy Our Beautiful BALBOA PARK AND MUSEUMS

SPECIAL NOTE

The parent/guardian's signature on the Application for entrance to the GSDSEF provides the necessary permission for students to participate in GSDSEF tours and other activities in Balboa Park. **FOR ALL GSDSEF ACTIVITIES, A STUDENT-EXHIBITOR MUST FOLLOW THEIR SCHOOL'S FIELD TRIP and/or ATTENDANCE PROCEDURES.**

Exhibitors Badges give all student-exhibitors free admission to most of the museums in Balboa Park between the conclusion of Judging on Wednesday, March 13, 2019 and the end of Science Fair on Sunday, March 17, 2019. Please check the Balboa Park website at www.balboapark.org for a list of museums and their hours.



FREE ADMISSION TO THE MUSEUMS IS ONLY FOR STUDENT-EXHIBITORS WEARING HIS/HER EXHIBITOR BADGE AND NOT FOR FAMILY MEMBERS OR FRIENDS.

- ❖ To enter the San Diego Zoo for free using your badge, report to the Zoo Guest Relations window.
- ❖ Special Exhibits at a museum may require a fee (at the student price). This includes admission to the IMAX Theater at the Reuben H. Fleet Science Center.

FACILITIES AND MUSEUMS TO ENJOY WHILE AT BALBOA PARK:



Botanical Gardens
Mingei International Museum
Museum of Photographic Arts
Reuben H. Fleet Space Museum
San Diego Air & Space Museum
San Diego Art Institute
San Diego Automotive Museum

San Diego Hall of Champions
San Diego Model Railroad Museum
San Diego Museum of Art
San Diego Zoo Global
Timken Museum of Art
San Diego Automotive Museum
Veterans Museum & Memorial



We encourage students to enjoy Balboa Park with a friend or in a group

65th Annual Greater San Diego Science & Engineering Fair - 2019

SENIOR DIVISION

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Senior Division – Animal Sciences

101	Huang	Aaron	10	How is Anxiety in <i>C. elegans</i> Affected by Increased Signs of Predators?	Canyon Crest Academy	Haas
102	Rehan	Aadil	12	Of Mice and Movement: The Role of the Deep Cerebellar Nuclei in Complex Forelimb Movement	Canyon Crest Academy	Haas

Senior Division – Behavioral and Social Sciences

105	Bahena Hernandez	Laritza	9	In School vs Out of School Therapy	Gompers Preparatory Academy	Ulyott
106	Belbese	Ahmed	11	Training Makes Perfect	Charter School of San Diego	Nasereiddin
107	Cai	Sean	10	Analyzing Stratified Ethical Behavior at Executive Levels with Firm-Corruption Shareholder Models	Scripps Ranch High	Gillum
108	Chung	Claire	10	Analyzing Correlative Evidence Between Social Media Use and Depressive Symptoms	Rancho Bernardo High	Hotz
109	Dela Rosa Flores	Patrick Raffiele	9 9	The Effect of Regular Mode versus Night Mode on iPhone User's Sleep During School Days	Sweetwater Union High	Sandoval
110	Gutierrez	Andrea	9	Filter or No Filter	Vincent Memorial Catholic High	Turner
111	Jimenez	Cesar	9	Concussions and Memory	Eastlake High	Bayley
112	Orozco Reyna Montoya	Savanah Alex	10 10	Typed vs Handwritten Notes	Central Union High	Rueda
113	Patil	Pranav	11	Determining the Effectiveness of Video Games in Cybersecurity Education	Del Norte High	Liao
114	Stallworth	Kayla	10	The Effect of Music on Human Reaction Time	Central Union High	Rueda
115	Young	Caneel	11	Is <i>Lactobacillus Rhamnosus</i> the Solution to Anxiety Relief?	Canyon Crest Academy	Haas

Senior Division – Biochemistry

118	Del Olmo	Sarah	12	Does a Peeled Apple a Day Keep the Doctor Away?	Bonita Vista High School	Mardahl-Dumesnil
119	Gan	Jessie	10	Using Bioinformatics Tools to Identify Epitopes in MMP-15, a Potential Lung Cancer Drug Target	San Diego Jewish Academy	Eisen

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Biochemistry (cont'd)						
120	Montano	Luz	10	Brightness of Luminol	Central Union High	Rueda
121	Verdolin	Michael	11	Pyogenic Urine May Affect Accuracy of LCMS Urine Drug Testing	Eastlake High	Bayley
122	Vu	Elise	10	Gene Expression and Repression in Embryonic Stem Cells and Neural Progenitor Cells	Canyon Crest Academy	Haas
123	Wong	Elleanor	12	Investigation of Hydrolytic Enzymes Present in Commercial Probiotics Using Starch and Lactose	Bonita Vista High	Mardahl-Dumesnil
124	Yang	Joyce	11	Effect of shRNA on GnRH-R Synthesis	Canyon Crest Academy	Haas
125	Yao	Derrick	11	Machine Learning Based Primer Design for Recombinase Polymerase Amplification	Canyon Crest Academy	Haas
126	Zhang	Paul	10	Computational Discovery of Novel PIEZO2 Inhibitors to Potentially Treat Tactile Allodynia	Canyon Crest Academy	Haas

Senior Division – Chemistry

129	Chaudhuri	Anushree	11	A Porous Silicon Optical Nanosensor for Toxic Organic Vapors	Westview High	Loo
130	Madayag	Tyler	8	Boost: How Does It Work?	St. Francis of Assisi	Fantano
131	Murray	Will	11	Understanding Ratiometric Imaging of Porous Silicon (pSi) Nanoparticles for Functional Imaging and Selective Sensing Applications	Francis Parker School	Ziegler

Senior Division - Computer Science

133	Chowdhuri	Sauhaarda	11	PhonoNet: Deep Learning For Raga Identification In Indian Classical Music	Westview High	David
134	Elarabawy	Adham	11	Predicting Optimal Farming Regions via Machine Learning Trained on Novel Vegetation Index	Canyon Crest Academy	Haas
135	Fan Hsieh	Leonard Jonathan	11 11	Predicting Blood Glucose Level In Type 1 Diabetes Patients Using Recurrent Neural Networks	Canyon Crest Academy	Haas
136	Fowler	Lou	9	The Red Schoolhouse: A Tool For Assessing Environmental Risk In SDUSD Schools	Academy of Our Lady of Peace	Wiedower
137	Granja Yang	Tatiana Macey	10 10	Food Fetch	San Pasqual High	Duran

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division - Computer Science						
138	Levine	Alex	12	Efficiently Identifying High-Centrality Actors in Modular Networks	La Jolla High	Eaton
139	Liu	Daniel	11	Extending Adversarial Attacks and Defenses to Deep 3D Point Cloud Classifiers	Torrey Pines High	Newman
140	Lu	Junyi	11	Air and Quality Detector	Canyon Crest Academy	Haas
141	Park	Seonggeun	11	Physics Phun: The Gamification of Physics Education through a Mobile App	Olympian High	Claudio
142	Rao	Adithya	11	Android AiSL : American Sign Language (ASL) Fingerspelling to Speech Translator Using Artificial Intelligence on Android	Canyon Crest Academy	Haas
143	Soliman	Ziyad	9	Pass Your Bill: Understanding Legislation Using Machine Learning	Mount Everest Academy	Nasereiddin
144	Sumpena	Edmund	9	aTrack: Cost-Effective Asset Tracking Based on Cooperative Crowdsourced Mobile Sensors	Westview High	Halander
145	Wu	Dustin	11	Convolutional Neural Network Ensemble For Histopathologic Cancer Metastasis Detection	Pacific Ridge High	Mudaliar
146	Yaramada	Sahithy	11	Detecting Abnormal RBCs with Computer Vision	Canyon Crest Academy	Haas
147	Zhuang	Hsiang-Kuang	9	The Most Effective Characteristics of a Secure Password	Mount Everest Academy	Apazidis

Senior Division – Engineering: Electrical and Mechanical

150	Amanullah	Yusuf	10	An Advanced Bicycle Safety System to Prevent Rider Injuries	Mt. Everest Academy	Negus
151	Bodenhamer	Tyler	9	Engineering a 3D Printer Built with Recycled Computer Parts	Serra High	Gonia
152	Cantwell Plancarte	Amanda Victor	12 12	Sensing Your Concentration	Central Union High	Rueda
153	Dehaini	Hamza	10	Reducing the Amount of Wildfires Caused by Power Line Snapping	Scripps Ranch High	Nasereiddin
154	Duong	Han	9	Power of Turbines	Eastlake High	Bayley
155	Kuo	Marc	9	Visual Field Mapping By Embedded LED Array	La Jolla High	Kuo
156	Peluso	Brent	12	Electrothermally Cooling a Pitcher's Arm	Canyon Crest Academy	Haas
157	Reddy	Rakesh	11	Affordable Off-site 3D-printable Below-the-Knee (BKA) Prosthesis	Francis Parker High	Ziegler

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Senior Division – Engineering: Energy and Transport

159	Lew	Ken	11	Graphene Composite Material and Heatsink Application in Fire Resistant Drone Design	La Jolla Country Day School	Padgett
160	Schremmer	Zachary	11	Stirling Engine Combined Heat and Power Systems	University City High	Quessenberry

Senior Division – Engineering: Materials and Bioengineering

161	Beg Sun	Harris	11	A Novel Approach to Dermatology via Neural Networks	Canyon Crest Academy	Haas
		William	12			
162	Caligiuri	Christopher	10	BrainBot: Integrated Robotics Platform for Modeling and Interacting with Cortical Organoids	Canyon Crest Academy	Haas
163	Catanzaro Catanzaro	Francisco	10	Measuring Chlorophyll Fluorescence and Spectral Reflectance for the Remote Sensing of Agriculture	Cathedral Catholic High	Milani
		Isabella	12			
164	Dehaini	Dina	12	Synthesizing a Bispecific Antibody for Alzheimer's disease	Scripps Ranch High	Nasereiddin
165	Gurram Wu	Sumanth	12	Electromagnetic Fields Inhibit Cancer Proliferation: An Interdisciplinary Approach to Improve Treatment	Westview High	Halander
		David	12			
166	Huang Huang	Ryan	9	A Microbiome - AI Sensor for Detection of UV Risk	Canyon Crest Academy	Haas
		Tristan	11			
167	Kuo	James	10	Semi-permeable Membrane to Minimize Traffic Disruptions When Re-painting Roads	La Jolla High	Kuo
168	Palayur	Ann	11	Computerized Muscle Control for Paralyzed Patients Using Non-Toxic Batteries	Saint Joseph Academy	Kerekes
169	Pollner	Alina	11	Super-Mendelian Inheritance Mediated by CRISPR-Cas9: Bioengineering Plant Genomes to Increase Crop Production	Canyon Crest Academy	Haas
170	Rabe Rosales	Heidi	12	Improvising Instruments	Central Union High	Rueda
		Ricardo	12			
171	Randhawa	Waleed	9	A Digital Dual-Hormone Artificial Pancreas: A Year Two Study	Scripps Ranch High	Gillum
172	Reeb	Remy	11	Reducing the Incidence of Falls Among the Elderly	Cathedral Catholic High	Lopatka
173	Tianshi	Emily	10	Biomimicking Torrey Pine Needles: Atmospheric Moisture Harvesting Through Alternating Hydrophilic/Hydrophobic Micro-Patterns	The Cambridge School HS	Mayne

Senior Division – Environmental Sciences and Management

176	Decilap	Ambre	12	The Effect of Nitrate Runoff on Microbial Fuel Cells	Bonita Vista High	Mardahl-Dumesnil
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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Environmental Sciences and Management (cont'd)						
177	Nafarrete	Noah	11	The Impact of Plants on Soil Erosion and Turbidity	Bonita Vista High	Mardahl-Dumesnil
178	Sung	Anthony	9	Go Green Roofs	The Cambridge School HS	Mayne
179	Tucker	Timothy	11	Vehicle Emissions and Tropospheric Ozone	Bonita Vista High	Mardahl-Dumesnil
180	Vargas Vargas	Alfred Audrey	12 10	Photocatalytic Treatment of Wastewater and Generation of Electricity Through Hydrogen Fuel Cell Technology	Sweetwater Union High	Sandoval
Senior Division – Mathematical Sciences						
182	Faktor	Benjamin	10	Solution Of Lotka-Volterra Equations For Novel Analysis	Canyon Crest Academy	Haas
183	Madhukara	Rachana	11	Error Term Analysis for Weighted Character Sums	Canyon Crest Academy	Haas
184	Shimabukuro	Benjamin	10	Coin Flip Fairness	Mt. Everest Academy	Tran
Senior Division – Medicine and Health Sciences						
186	Abdurrahman	Hasan	9	Viability of Smartphone Hearing Test Applications for Early Hearing Loss Detection	Mt. Everest Academy	Apazidis
187	Agashe	Ruchi	11	Identification of Treatments for Hemophilic Joint Disease through Evaluation of Vascular Defects via Optimization of Imaging Techniques	Canyon Crest Academy	Haas
188	Cibrian Tanori	Alecsander Efrain	10 10	Pizza Grease	Central Union High	Rueda
189	De La Rosa Negrete	Alexis Alexis	12 11	Sensory Screening Test For Dementia	Central Union High	Rueda
190	Dogra	Arushi	11	Effects of Novel Dual PI3K-BRD4 Inhibitor SF2523 on Mantle Cell Lymphoma Survivorship	Del Norte High	Smedley
191	Gandarilla Nogueira	Sofia Tamara	11 11	Bye Bye Bacteria	Eastlake High	Bayley
192	Hammad	Tasneem	9	The Effect of Natural Remedies and Nanoparticles on Cells	Bright Horizon Academy	Nasereldin
193	Kim	Elliott	10	Metastats: A Prediction Program/Matrix for the Metastatic Development of Melanoma Cancer	Scripps Ranch High	Gillum
194	Lara	Mary Jasmine	12	PHLPP's Protective Properties: Nicotine's Attenuation on Drug Therapies Targeting Cardiac Arrest	Olympian High	Claudio

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Medicine and Health Sciences						
195	Lee	Ji Hyun	12	Creating a Three Dimensional Airway Cell Culture to Study Asthma	Canyon Crest Academy	Haas
196	Liu	Andrea	12	The Role of G-CSF-R in Medulloblastoma Cancer Stem Cells and Pathogenesis	Canyon Crest Academy	Haas
197	Mandyam	Atulya	9	Cell-death by Methamphetamine is related to increased activation of Caveolin-1 and Kinases	Westview High	Christopher
198	Matute	Nachelle	12	The Effects of Music on the Heart	Bonita Vista High	Mardahl-Dumensil
199	Piccioni	Sofia	11	Novel Method Using CRISPR CAS9 to Change K562 Cells' Blood Type	Canyon Crest Academy	Haas
200	Randhawa	Omer	11	The Impact of the APOE gene on Alzheimer's Gender Discrepancy Genetics	Scripps Ranch High	Gillum
201	Suri	Umit	11	Risk Factors and Outcomes of Infants with Pneumothorax	Francis Parker School	Ziegler
202	Tahan	Alexander	10	Enhanced MAF Gene Expression as a Novel Strategy for Cancer Treatment	Canyon Crest Academy	Haas
203	Tang	Jason	10	USP7 Inhibitor as a Novel Therapeutic Treatment for Triple Negative Breast Cancer	Canyon Crest Academy	Haas
204	Wang	Kate	10	A Computational Approach for Modeling Nonsense Mutations in DMD	Canyon Crest Academy	Haas
205	Wang	Kaitlyn	11	shRNA-Mediation of UGGT1 to Modulate Excessive Procollagen Secretion in Cardiac Fibrosis	Canyon Crest Academy	Haas

Senior Division -- Microbiology

208	Chang	James	10	Creating a Strain of IFN-Producing Bacteria which Survives in Human Gut	Canyon Crest Academy	Haas
209	Kang	Emily	10	Turning Over A New Phage: A Novel Approach To Phage Therapy	Canyon Crest Academy	Haas
210	Mulvehill	Allison	11	The Effects of Sodium Benzoate on Micronuclei Occurrence in HEK293 Cells	Canyon Crest Academy	Haas
211	Murthy	Adhithi	9	Finding An Alternative to Antibiotics: Year 3	Del Norte High	Gillum
212	Rainey	Georgia	9	The Effect of Different Colored Lights on Dinoflagellate Luminescence	Mt. Everest Academy	Apazidis
213	Zhu	Wanyi	10	Role of dpy-13 in Osmotic Stress Resistance in Caenorhabditis Elegans Eggs	Canyon Crest Academy	Haas

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Physics and Astronomy						
215	Barrett	Brianna	10	The Effect of Weather on the Speed of a Softball	Central Union High	Rueda
216	Broudy	Isaac	11	Developing a Linear Polarimeter for Astrophysical Tests of Beyond Standard Model Physics	Bonita Vista High	Mardhal-Dumesnil
217	Holst	Mason	10	An Optimized Multigrid Algorithm for Enabling Efficient Physical Simulations on Realistic Geometries	Canyon Crest Academy	Haas
218	Vijayakumar	Vivek	10	Analysis of Molecular Spectra in AGB Carbon Stars	San Marcos High	Terrill

Senior Division – Plant Sciences

220	Camacho	Karla	12	Effect of Microwave Radiation on <i>Raphanus sativus</i> and <i>Saccharomyces cerevisiae</i>	Central Union High	Rueda
221	He	David	10	Effect Of Genetic Modification Of DMR6 On <i>Solanum Lycopersicum</i>	Canyon Crest Academy	Haas

JUNIOR DIVISION

Junior Division – Animal Sciences

501	Adato	Nisso	8	Who Let the Dogs Out	Soille San Diego Hebrew Day School	Bessler
502	Dalessio	Jeni	7	Does One Color of Hummingbird Food Attract More Hummingbirds or Less?	Nazareth School	Reed
503	Dinh	Jason	7	Birds Sight and Colors	Oak Grove Middle	Gale
504	Dio	Katherine	8	Fish Frenzy	Carlton Hills	Ducharme
505	Jones	Isabel	7	Dogs Voice Preference	St. Didacus Parish School	Blickenstaff
506	Martin	Shane	7	What Does Fido Know? A Cognitive Study	St. Gregory the Great Catholic School	Ryan
507	Matsumoto	Soleil	7	The Very Hungry Caterpillar, I Mean Worm!	Santa Fe Christian School	Culley
508	Meroniuk	Kaden	8	Good Things Come to Those Who Bait: A Behavioral Study of Fish	Coastal Academy	Biernacki
509	Patel Samy	Neelan David	7 7	Effects of Infrared and Visible Light Wavelengths on Planaria Regeneration	The Rhoades School	Hunker

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Animal Sciences (cont'd)						
510	Prince	Kaia	7	Ants and Sugar	St. Didacus Parish School	Blickenstaff
511	Reynolds	Alyana	7	Worm Leachate vs. Water	St. Rita's School	Rice
512	Teran	Daniela	7	Ladybugs and Color	St. Didacus Parish School	Blickenstaff
Junior Division – Behavioral and Social Sciences						
517	Arredondo Brown	Emma Sarah	7 7	Learning Styles	St. Michael's School Poway	Poling
518	Assamene	Meron	7	Do Different Types of Music Affect the Heart Rate?	St. Didacus Parish School	Blickenstaff
519	Baes	Piper	7	Colorful Memories	St. Peter the Apostle School	Jones
520	Baldeaux	Katelyn	7	How Does Background Noise Affect Your Ability to Identify Food	St. Therese Academy	Peterson
521	Balubar	Jodeci	8	Phantom Limbs	Farb Middle	Huntington
522	Barraza-Corpus	Rico	8	Effects of Finger Activity on Dexterity	St. Didacus Parish School	Blickenstaff
523	Abejo	Jay	7	Why Do We Yawn?	St. Michael Academy	Okuley
524	Barton Burrows	Mele Noa	7 7	Misconstruing the Tone of a Written vs. Verbal Message	The Rhoades School	Hunker
525	Afra	Aviya	7	Investigating the Correlation Between Demographics and Attitudes Towards Contemporary Social Movements	The Rhoades School	Hunker
526	Bartsch	Andrew	8	Ice Ice Baby!	De Portola Middle	Bridges
527	Apostol	Korina	7	A Word's Meaning Interfering with the Ability to State a Word's Color	St. Michael Academy	Okuley
528	Bayot	Abigail	7	How Important is Letter Placement in Reading?	St. Rita's School San Diego	Rice
529	Arnold	Abigail	7	Is the Stroop Effect More Visible in Children or Adults?	Mount Helix Academy	Hudson
530	Bryant	Michelle	7	Children Value Something More If They Worked for It	Santa Fe Christian School 7-8	Culley
531	Clardy	Ashley	7	Advantages of Dyslexia!	Santa Fe Christian Schools 7-8	Culley
532	Cohen	Bertha	8	Blueberries - What They Can Do for You	Soille San Diego Hebrew Day School	Bessler

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Behavioral and Social Sciences (cont'd)						
533	Colello	Quinn	8	Which Sense Has the Fastest Reaction Time: Sight, Hearing, or Touch?	Coastal Academy	Biernacki
534	Copeland Houk	Kylie Alexandra	8 8	The Effects of Auditory Cues on Recall of Visual Materials	The Rhoades School	Hunker
535	Dalton	Mariana	8	The Ranschburg Effect: Myth or Fact?	St. John of the Cross	Krumm
536	De Las Alas	Jeremy	7	Does the Awareness of a Negative Consequence Affect the Way You Work?	St. Michael Academy	Okuley
537	Demarchi	Bianca	8	Does Social Media Affect Self-Confidence in Teenagers?	St. Therese Academy	Peterson
538	Deneen	Kendal	8	Oh Happy Day	St. John School - Encinitas	Heins
539	Dondisch	Giulianna	8	Which Age Is Most Likely To Cheat?	San Diego Jewish Academy	Deveau
540	Elasaad Ryan	Leila Leia	7 7	Attention vs Retention: Effects of Notetaking on Short and Long Term Memory	The Rhoades School	Hunker
541	Fradkin	Avraham	7	Does Grade Level Affect the Stroop Effect?	Chabad Hebrew Academy	Gonzales
542	Frigerio	Lora	8	Does Color Affect Memory	St. Rita's School	Rice
543	Goncalves	Sophia	7	All About That Bass	St. John School-Encinitas	Heins
544	Gonzalez Jimenez	Anais Valentina	8 8	Audio Illusions	Our Lady of Mount Carmel	Gomez
545	Goodwin	Karis	7	Stop Copying Me	St. John School-Encinitas	Heins
546	Gutierrez	Mia	7	Can You Feel It?	St. Mary's - El Centro	Teran
547	Gutman	Ella	8	Eye Color Effect on Eye Sight	San Diego Jewish Academy	Deveau
548	Halenza Palmer	Carter Luke	7 7	You've Got the Beat!	The Rhoades School	Hunker
549	Hayek	Quinn	8	Measuring Multitasking	St. Peter the Apostle School	Jones
550	Hecht	Sydney	8	Testing the Impact of Gender on a Variation of the Prisoner's Dilemma	The Rhoades School	Hunker
551	Inocentes	Alecsandra	7	How Does What You See Affect What You Hear?	St. Michael Academy	Okuley
552	Kaplan	Elianna	8	Feel the Flavor	Soille San Diego Hebrew Day School	Bessler

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Behavioral and Social Sciences (cont'd)						
553	Kareem	Rozita	7	Need Help Focusing?	Bright Horizon Academy	Nasereiddin
554	Katz	Jesse	8	How Does Stress Affect Our Everyday Life?	San Diego Jewish Academy	Deveau
555	Kavanaugh	Colin	7	Outdoors or Indoors - Which is Best for Taking a Test	All Hallows Academy	Humkey
556	Klein	Brenan	8	If You Know Hebrew, Can You Read Backwards Easier?	San Diego Jewish Academy	Deveau
557	Kyne	Silas	7	To Color or Not to Color - That is My Question	St. Joseph Academy	Rice
558	Lay	Kyla	7	Balance It Out	St. Didacus Parish School	Blickenstaff
559	Little	Alexandra	8	Investigating Eyewitnesses	St. Peter the Apostle School	Jones
560	Lopez Portillo Nelson	Isabella Ella	8 8	Does Living a Healthier Lifestyle Lead to Better Memory?	Our Lady of Guadalupe Academy	Patton
561	Mannor	Rebecca	8	How Exercise Affects Reaction Time	San Diego Jewish Academy	Deveau
562	Marley	Katie Grace	7	Battle of the Brands	St. Peter the Apostle School	Jones
563	Martino	Tyler	7	How Does Technology Affect Reaction Time?	St. Michael Academy	Okuley
564	McKeeman	David	7	Amygdala Reactions	Coastal Academy	Biernacki
565	Mechling	Alyssa	7	How Does Music Affect Memory in the Elderly?	Nazareth School	Reed
566	Montiel	Ashley	7	How Do Adults and Children React to When Other Children are Autistic	St. Michael Academy	Okuley
567	Morales Tinoco	Vanesa Breanna	8 8	Controller Coordination	St. Peter the Apostle School	Jones
568	Nasry Scott	Monica Ireland	8 8	Feeling Test Failure	St. Peter the Apostle School	Jones
569	Nesbitt Telfer	Wesley Trey	7 7	Documenting Reactions to Voice Confrontation	The Rhoades School	Hunker
570	Nguyen	Daphne	8	Can People Taste the Difference Between Yeasts?	Farb Middle	Huntington
571	Noce	Sofia	8	Can Humans Echolocate to Find the Mass of an Object?	St. John of the Cross	Krumm
572	Oden	Kaitlyn	8	Do You See What I See? - Eyewitness Accuracy	De Portola Middle	Yepiz
573	Panontongan	Jorielle	7	Does Running Help Your Memory	St. Michael Academy	Okuley

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Behavioral and Social Sciences (cont'd)						
574	Parisette	Olivia	8	The Effect of Activity on Time Perception	City Tree Christian School	Lee
575	Pascua	Jazmine Marie	8	How is Comprehension Affected by Reading from Paper Versus an Electronic Device?	St. Michael Academy	Okuley
576	Paumgardhen	Martina	8	Photograph: The Benefit of Instant and Powerful Communication	Farb Middle	Huntington
577	Persichilli	Emma	7	Effect of Packaging on Food Preference	St. Didacus Parish School	Blickenstaff
578	Pham	Amelia	7	Do Sensory Materials Help Children Learn Letters?	Nazareth Catholic School	Reed
579	Pham	Shaun	8	Reaction Time	St. Didacus Parish School	Blickenstaff
580	Philo	Lily	7	How Does Chewing Gum Affect Test Scores?	St. Michael's School Poway	Poling
581	Pupko Ginsberg	Eduardo	8	All for One, or One for All?	San Diego Jewish Academy	Deveau
582	Quezada	Adriana	7	The Science of Stuttering	St. John School - Encinitas	Heins
583	Roberts	Maura	7	Peppermint: Taste vs. Smell: Which One Affects Multiplication Test Scores the Most?	St. Michael's School Poway	Poling
584	Ross	Annabella	8	The Name Game	St. Peter the Apostle School	Jones
585	Sanchez	Sofia	7	Hands-Free Reaction Time	Bonita Vista Middle	Abundes
586	Sandoval	Daniela	7	How Does Clothing Affect the Perspective Others Have of You?	Corfman School	Leon
587	Savant	Ainsley	8	Vigor and Verts!	St. John School-Encinitas	Heins
588	Schultz	Julia	8	Does Priming Work?	San Diego Jewish Academy	Deveau
589	Stambaugh	Eden	7	Developing Empathy	Santa Fe Christian School 7-8	Culley
590	Tabalon	Jacob	7	How Do Others Affect Our Own Opinion	St. Michael Academy	Okuley
591	Territo Thomas	Sofia Shilo	7 7	Group vs Individual	St. Michael's School Poway	Poling
592	Thaper Weston	Mehar Jamie Jane	7 7	Effects of Transient Emotions on Short Term Memory	The Rhoades School	Hunker
593	Thomas	Aaliyah	7	Teamwork with Friends vs Strangers	St. Michael Academy	Okuley
594	Ty	Jonathan	8	Multitasking in a School Environment - Good or Bad?	National City Middle	Jones

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Behavioral and Social Sciences (cont'd)						
595	Vidal Jacobo	Estrella	8	Does Having Different Passwords for Different Accounts Matter?	Farb Middle	Huntington
596	Weiss	Sammi	8	How Music Affects Memory	San Diego Jewish Academy	Deveau
597	Wellman	Alexandra	8	How Do We Process Reading the Best?	San Diego Jewish Academy	Deveau
598	Woodford	Andy	8	The Effects of Social Media on Teenager's Mental Health	Rancho del Rey Middle	Castillo
Junior Division – Biochemistry						
603	Benitez	Nora	7	What Type of Water Has the Least Bacteria?	St. Therese Academy	Peterson
604	Clark	Mia	8	Solving the Mysteries of Food Dye with Gel Electrophoresis	De Portola Middle	Yepiz
605	Diaz	Azul	8	Save and Protect: Testing the Effectiveness of Biodegradable Packaging	Chula Vista Middle	Saclauso-Caro
606	Elmi	Mumtaaz	8	Can Herbicides & Pesticides Have an Effect on a Planaria Nervous System?	Bright Horizon Academy	Nasereiddin
607	Espinoza	Roxanna	8	Effects of Preservatives on Bread Molding Times	Chula Vista Middle	Saclauso-Caro
608	Gagiolo	Ty	7	Going Bananas!	St. Didacus Parish School	Blickenstaff
609	Halili	Mia Ann	7	pH and Biogas Production	St. Michael's School - Poway	Poling
610	Katriel Nagarajan	Levi Krishna	7 7	From Caged to Free Range: Comparing Nutritional Profiles in Hens' Eggs	The Rhoades School	Hunker
611	Leshner	Ryan	8	Sugar & Starch: How Do Carbohydrates in Junk Food Affect Teenagers?	Grant Middle	Baldwin
612	Mahoney	Lily	8	What Milk Rots the Quickest?	St. John School-Encinitas	Heins
613	Marshburn	Timothy	8	Tricking the Brain Into "Smelling" Differently	Coastal Academy	Biernacki
614	Obispo	Zachary	8	Which Fruit Has the Most Vitamin C?	St. Michael Academy	Okuley
615	Otero	Kai-Jia	7	Five Second Rule: True or False?	Coastal Academy	Biernacki
616	Peng	Meixi	8	How Does Different Cooking Techniques Affect The Glucose Level of The Corn?	Wangenheim Middle	Mendibles
617	Pham	Jessica	8	How Does the Concentration of Sugar Solution Affect Flower Preservation?	Wangenheim Middle	Mendibles

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Biochemistry (cont'd)						
618	Roddy	Sydney	8	Candy vs Temperature	Farb Middle	Huntington
619	Ross	Bo	8	Bubbliest Kombucha	St. Mary Star of the Sea School	Alonso
620	Scelfo	Claire	7	Orange You Glad There Is Vitamin C?	St. Gregory the Great Catholic School	Ryan
621	Shakhman	Sari	8	When Is It Time to Get a New Towel?	Soille San Diego Hebrew Day School	Bessler
622	Walrath	Claire	7	Sauerkraut: Which Method of Fermentation is the Most Efficient?	Nazareth School	Reed
623	Wilson	Henry	7	The Best Food Battery	St. Didacus Parish School	Blickenstaff

Junior Division – Chemistry

626	Abdi	Yasmin	7	Cook and Reuse	Bright Horizon Academy	Nasereiddin
627	Barrett	Brooke	8	The Effect on Fabric Type on Burning Rate	City Tree Christian School	Lee
628	Biese	Therese	8	Chemiluminescence in Forensic Science	St. Joseph Academy	Rice
629	Bridge	Anna	8	Paint and Temperature	Farb Middle	Huntington
630	Camposeco	Rosalina	8	The Effects of Different Strengths of Antacids on Lemon Juice	Wangenheim Middle	Mendibles
631	Cardenas	Marina	7	Sponge Absorption	St. Therese Academy	Peterson
632	Charles Ducharme	Trevor Connor	8 8	The Leaning Tower of Ice	Carlton Hills	Ducharme
633	Dhamim	Noorah	8	A Bio Friendly Oil Spill Remover	Bright Horizon Academy	Nasereiddin
634	Downing	Iliana	7	What Makes "Slime" Last Longer?	St. John School-Encinitas	Heins
635	Fimbres	Rossana	7	Purple Cabbage pH Indicator	St. Mary's School - El Centro	Teran
636	Finley	Jade	8	Testing Contaminant Levels in Water	National City Middle	Jones
637	Guzman	Breann	8	What Type of Oil Separates from Water the Fastest?	Farb Middle	Huntington
638	Hernandez	Gael	8	The Effect of Temperature on the Rate of Rust Formation on Iron	St. Michael Academy	Okuley
639	Juarez	Saraih	8	How Much Salt is Needed in Water for an Object to Float?	Chula Vista Middle	Tom

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Chemistry (cont'd)						
640	Lai	Malvyn	8	Catalyst Efficiency for Producing Energy Fuels by Water Splitting	Mt. Everest Academy	Tran
641	Le	Theresa	8	Acid Rain	Farb Middle	Huntington
642	Mascarina	Eryn	8	The Effect of Spf Level on Time	Wangenheim Middle	Mendibles
643	Mozaffari	Sholeh	7	Same Chemical Process, Different Types of Hair	All Hallows Academy	Humkey
644	Shen	Christina	8	Flour Power	St. Didacus Parish School	Blickenstaff
645	Singer	Catherine	7	Does Coke, Water, or Milk Rot Your Teeth the Quickest?	Mount Helix Academy	Hudson
646	Staley	Justine	8	Effects of Growing Alum Crystals Under Various Light Colors	Wangenheim Middle	Mendibles
647	Stys	Summerlyn	7	Sugar and a Drink: How Hot Can It Get	All Hallows Academy	Humkey
648	Willett	Adelina	7	Candle Burn Times	St. Therese Academy	Peterson
649	Winicki	Anthony	8	Which Food Has More Energy?	St. Mary Star of the Sea School	Alonso
650	Zamora	Dafydd	8	Wood and Water Absorption	St. Didacus Parish School	Blickenstaff

Junior Division – Computer Science

655	Bamford Taylor	Tom Ashur	7 7	Constructing a Wildlife Recognition System Using a Raspberry Pi	The Rhoades School	Hunker
656	Bautista	Edvar	8	WIFI FAST and... WIFI CRASHED!	Chula Vista Middle	Saclauso-Caro
657	Correll Mallela	Cyrus Vihaan	8 8	Applying Neural Network Techniques to Compute Stellar Values	The Rhoades School	Hunker
658	Khan	Mohammad Ibrahim	8	Long-Range Text Reader	Bright Horizon Academy	Naserelddin
659	McKay Quinonez Munoz	Alejandro Daniel	8 8	Is There Really a Better Way to Win a Board Game?	Our Lady of Mount Carmel	Pereyra
660	Rosander	Patrick	8	Coding a Video Game	St. John School - Encinitas	Heins

Junior Division – Earth and Planetary Science

664	Atis Jayco	Owen Robin	7 7	Seeing Particles Through a Cloud Chamber	St. Rita's School	Rice
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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Earth and Planetary Science (cont'd)						
665	Bantval	Pranav	8	Impact of Rainfall and Sea Level on Flood Related Loss in San Diego	Carmel Valley Middle	Fredin
667	Carbajal Ruiz	Karol Ana	7 7	Flower Color Changing	Our Lady of Mount Carmel	Pereyra
668	Estevez	Eli	8	Oxygen: How Much Is In Your Air?	St. Pius X School	Doyle
669	Freaner	Maria Fernanda	8	The Effect of Betta Fish Fertilizer on Plant Growth	City Tree Christian School	Lee
670	Leyva	Aidan	8	What Ground is Best for Cast Fossilization	Corfman School	Claverie
671	Lindgren	Emily	8	Porosity of Soil	St. Didacus Parish School	Blickenstaff
672	Lyons	Amanda	7	Rooting Around Erosion	St. Michael's School - Poway	Poling
673	Magat	Xavier	8	Dispersion of Oil	St. Rita's School	Rice
674	Manriquez	Madeline	7	What Materials Last Longer in Wave Erosion?	Nazareth School	Reed
675	Murray	Erin	7	Which Beach Has More Toxic Phytoplankton?	Classical Academy Middle	Giesing
676	Tran	Steven	8	Erosion Reduction	Wangenheim Middle	Mendibles

Junior Division – Engineering: Electrical and Mechanical

680	Abdelaal	Adam	8	Helping Eye for the Blind	Bright Horizon Academy	Naserelddin
681	Aldrete	Carlos	8	First Down Accuracy Laser	Rancho del Rey Middle	Walker
682	Allen Coates	Alexis Dayna	7 7	Flame vs. Sound	Rancho del Rey Middle	Tu
683	Alwazir	Solaiman	8	Drone Disaster, First Responder	Bright Horizon Academy	Naserelddin
684	Alwazir	Ayat	8	HealthBand	Bright Horizon Academy	Naserelddin
685	Bagnas Waters	Bryan Ryan	8 8	Oxygen Concentrator	Marston Middle	Holland
686	Bane	Timothy	7	Power Through Wind	Good Shepherd Catholic School	McNeil
687	Bhatkar	Ayaan	8	Minimizing Earthquake Damage for Buildings	Bright Horizon Academy	Naserelddin
688	Blaylock Feiner	Jack Dan	7 7	Item Carrier for Drones	St. Michael's School - Poway	Poling

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Engineering: Electrical and Mechanical (cont'd)						
689	Bocalan	Donovin	8	Static Panic	St. Pius X School	Doyle
690	Bradley	Eamon	7	What Material for Drumsticks Produces the Highest Decibel Level?	Nazareth School	Reed
691	Catanzaro	Marcus	7	Rock and Roll Derailment: Reducing Harmonic Oscillation in Trains	Pacific Beach Middle	Hollis
692	Chatha Chatha	Anusha Arjun	7 7	Obstacle Avoiding Robot: A Reinforcement Learning Approach	The Rhoades School	Hunker
693	Chesney Eiguren	Ethan Alexander	8 8	The Battle of the Motors: Hydraulic vs. Electric	St. John School - Encinitas	Heins
694	Colucci Putnam	John Paul Andrew	8 8	Solar Powered Phone Charger	St. John School - Encinitas	Heins
695	Criger	Samuel	7	Is It Possible to Cook a Potato with a Battery?	St. Mary Star of the Sea School	Alonso
696	Demegillo	Catherine	8	How Does the Type of Fingertip Effect the Grip Strength of the Mechanical Arm?	Wangenheim Middle	Mendibles
697	Espinosa	Michael	8	How Do Colored Filters Affect Solar Panel Energy?	Chula Vista Middle	Tom
698	Fonzo	Nick	8	Self-Driving Security Vehicle	St. John School - Encinitas	Heins
699	Gamiz	Alan	7	Which Structures Would Best Withstand an Earthquake?	All Hallows Academy	Humkey
700	Gonzalez	Luis	8	Binaural Microphones	Our Lady of Mount Carmel	Pereyra
701	Harper Nickel	Annika Bailee	8 8	The R.S.R.S (Rapid Space Retrieval System)	Marston Middle	Holland
702	Horbul	Kiryl	8	Zzzzzz...	Coastal Academy	Biernacki
703	Kantala	James Nathan	8	Build the Wall!	Wangenheim Middle	Mendibles
704	Konja	Gabriel	7	Batter Up	Nazareth School	Reed
705	Lawrenz	Lilli	7	Temperature: Do Windmills Care?	St. Gregory the Great School	Ryan
706	Lopez	Mayela	7	The MiP Robot and Obstacle Sizes	St. Didacus Parish School	Blickenstaff
707	McKinney	Nathan	7	Manipulating Magnetic Forces in an Electric Motor	Good Shepherd Catholic School	McNeil
708	McWilliams	Jessica	8	Crash Avoidance System	Thurgood Marshall Middle	Schumacher
709	Menon	Lakshmi	8	Developing a Multimodal Robotic Scoop	The Rhoades School	Hunker

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Junior Division – Engineering: Electrical and Mechanical (cont'd)						
710	Mulvihill	Matthew	7	Mechanical Hand	Corfman School	Leon
711	Nguyen Nguyen	Emily Catherine	8 8	A-"Wave" from Global Warming	Good Shepherd Catholic School	McNeil
712	Pampo	Aiden	8	The Effectiveness of Seawalls Against Waves	Wangenheim Middle School	Mendibles
713	Peterson	Drew	8	The Road Safe: A Box to Lock Up Your Phone While Driving	Coastal Academy	Biernacki
714	Rao	Rahul	7	Mobile Obstacle Detector & Warning System for the Visually Impaired	Pacific Trails Middle	Thacker
715	Renda	Nina	8	Cell Phone Radiation on Apple Phones	St. Didacus Parish School	Blickenstaff
716	Renteria Velarde	Claudia Ana	8 8	Solar Power vs Air Power	Our Lady of Mount Carmel	Pereyra
717	Rizo	Ria	7	How Specific Wing and Tail Shape Combinations Affect Flight	Mt. Everest Academy	Tran
718	Roberts	Lauren	8	Does Hot or Cold Water Charge Phones Faster Using Thermoelectric Generator	St. Mary Star of the Sea School	Alonso
719	Sara	Francis	8	Acoustic vs. Electric Guitar	St. Rita's School	Rice
720	Schmidt Streitman	Caroline Scarlett	8 8	WAVE Goodbye to Fossil Fuels... It's Time to SEA Energy Differently!	The Rhoades School	Hunker
721	Serawit	Yacob	7	Batteries and Temperatures	St. Didacus Parish School	Blickenstaff
722	Sridharan	Agastya	7	A 3D Autostereoscopic Quasi-Static- Volumetric Display	Thurgood Marshall Middle	Schumacher
723	Stuhlmacher	Carter	8	Need a Lift?	Rancho del Rey Middle	Castillo
724	Suenaga- Stephens	Rion	8	How Does the Type of Metal Affect the Amount of Electricity Produced?	Wangenheim Middle	Mendibles
725	Wachowiak	Evan	7	A Study of Bike Helmet Effectiveness	Nazareth School	Reed
726	Zheng	David	8	The Efficiency of Winglets	National City Middle	Jones

Junior Division – Engineering: Energy and Transport

731	Aldrete Reichenberg	Emilia Sophia	8 8	Does the Altitude Affect How High a Volleyball Bounces	St. Therese Academy	Peterson
732	Alsheikh	Nathan	8	The Future of Transportation: Solar Cars	Rancho del Rey Middle	Walker
733	Arshad	Talha	8	Paper Airplane Wing Shape on Flight Duration	Rancho del Rey Middle	Osuna

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Engineering: Energy and Transport (cont'd)						
734	Baldovino	Joven	7	Parachute (Does Size Matter?)	Bonita Vista Middle	Shimasaki
735	Barajas Delgadillo	Eliam Sebastian	8 8	Solar Traffic Light	Our Lady of Mount Carmel	Pereyra
736	Blue	James	7	Quantifying Model Airplane RPM at Full and Half Throttle	The Rhoades School	Hunker
737	Cehade	Leila	8	Magnetic Levitation Train	St. John School - Encinitas	Heins
738	Cordaro Shaffer	Brendan Max	7 7	The Water Maker	St. John School - Encinitas	Heins
739	De Jauregui	Hannah	8	Nose Cones are a BLAST	Wangenheim Middle	Mendibles
740	Guizar	Eric	8	Need Power? Testing the Accuracy of DIY Phone Charger	Chula Vista Middle	Saclauso-Caro
741	Hubbard	Grace	8	Bakin', Microwavin', and Sun Shinin'	Good Shepherd Catholic School	McNeil
742	Kerr	Virginia	7	The Effect of Gel Filters on Solar Energy Production	Nazareth School	Reed
743	Kircher	Noah	7	How Does Color Affect Solar Energy?	Bonita Vista Middle	Cardenas
744	Navarro	Blake	7	A Real Energy Race: Battery Power vs. Solar Power	Barbara Worth Junior High	Zinn
745	Perez	Leonardo	7	What Makes A Plane Fly?	Our Lady of Mount Carmel	Pereyra
746	Razo Flores	Octavio	8	DIY Battery Charger vs DIY Potato Charger	Chula Vista Middle	Saclauso-Caro
747	Spaven	William	8	Altering Fin Shape, to Make a Rocket, Skyrocket	Wangenheim Middle	Mendibles
748	Stevenson	Hannah	7	Powering A Marine Vehicle Using Solar and Magnetohydrodynamics	Coastal Academy	Biernacki
749	Watson	Jacob	7	Train Transportation Levitating or Wheels	St. John School - Encinitas	Heins

Junior Division – Engineering: Materials and Bioengineering

754	Claypool Green	Jocelyn Maxwell	7 7	D.A.N.C. Drug Administering Nano Chip	Marston Middle	Holland
755	Colucci Humphrey	Max Evan	7 7	Undercover Cars	St. John School - Encinitas	Heins
756	Englund	Lilian	7	Biological Erosion Control	St. Mary Star of the Sea School	Alonso
757	Farrukh	Nahal	7	Rooftop Gardens, Are They Good?	Bright Horizon Academy	Nasereiddin

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Junior Division – Engineering: Materials and Bioengineering (cont'd)						
758	Goodsell	Kai	7	Measuring the Effects of Materials on Blocking WiFi Signals	The Rhoades School	Hunker
759	Grissom	Jack	7	Metals Hot vs. Cold	St. Gregory the Great Catholic School	Ryan
760	Harris	Parker	8	Protective Barrier For Classrooms	Coastal Academy	Biernacki
761	Honold Nelson	Viviana Mia	8 8	Acoustics	St. Mary's School	Teran
762	Jaber	Bruno	8	Water on Wood	St. Didacus Parish School	Blickenstaff
763	Millan	Mateo	7	What Material Blocks RF Radiation the Best?	Bonita Vista Middle	Cardenas
764	Montiel	Jorge	8	Organic Fiber Replacement Plastic	Our Lady of Mount Carmel	Pereyra
765	Nozaki	Tenka	8	Singing Glasses: The Relationship Between Liquid Density and the Resulting Notes	Wangenheim Middle	Mendibles
766	Pajimola	Jacob	8	Rock Solid	St. Didacus Parish School	Blickenstaff
767	Sunnanonta	Todd	8	The Use for Plastic Waste	Wangenheim Middle	Mendibles
768	Thai	Tyler	8	Does Temperature Affect Sound Volume?	Wangenheim Middle	Mendibles
769	Tirado	Victor	7	Strength of Concrete, Sand to Cement	Nazareth School	Reed
770	Ymaz	Cecilia	8	Desalinate-It-Yourself: Desalinating Ocean Water Using a DIY Filter	Chula Vista Middle	Saclauso-Caro

Junior Division – Environmental Sciences and Management

775	Abdulkadir	Adam	7	How Does Acid Rain and Lime Affect Plant Growth?	Bright Horizon Academy	Naserelddin
776	Alwazir	Issa	8	Filter That Water!	Bright Horizon Academy	Naserelddin
777	Arechiga Luna	Elizabeth Frida	8 8	Are People Affected by Radiation Pollution Inside Their Homes?	St. John of the Cross	Krumm
778	Aswad	Farah	7	Grow Algae, GROW!!	Bright Horizon Academy	Nasrelddin
779	Bever	Amelia	8	How Compostable is Your Paper?	De Portola Middle	Bridges
780	Boeh	Andy	8	Copper Removal from Water	St. Didacus Parish School	Blickenstaff
781	Carbine	Douglas "Jake"	8	A Possible Alternative to Plastic Bags	St. John School - Encinitas	Heins

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Junior Division – Environmental Sciences and Management (cont'd)						
782	Cervantes Entwhistle	Sophia Emily	7 7	Conservation Questions? We Have the Answer!	St. Michael's School Poway	Poling
783	Crimaldi	Melia	7	Cooling the Urban Heat Island Effect	Santa Fe Christian Schools	Culley
784	Cunningham	Arianna	8	Carbon Filtering (CO2)	Farb Middle School	Huntington
785	de Andrade	Julia	7	Which Surface is the Most Reflective?	All Hallows Academy	Humkey
786	Dumas	Aaron	7	HAO Absorbent!	Santa Fe Christian Schools	Culley
787	Finlay Hamson	Lily Jaxon	8 8	Analyzing Runoff Water Quality at a San Dieguito Lagoon Tributary	The Rhoades School	Hunker
788	Flores	Jheren	8	Using Multi-Frequency Acoustics to Improve Production in Oil and Gas Wells	St. Michael Academy San Diego	Okuley
789	Hamud	Marty	8	The Mighty Pizza Liner	St. John School - Encinitas	Heins
790	Holland Wheatley	Elise Emma	7 7	Acid Rain	St. Michael's School Poway	Poling
791	Keddy Ruiz	Charles	8	What is the pH Level of Drinking Water in Chula Vista?	Chula Vista Middle	Tom
792	Krummenacher	Stephen	8	The Effects of Electromagnetic Radiation on Cellular Health	St. John School - Encinitas	Heins
793	Link	Morgan	8	Innovative Aeration Device to Reduce Methane Production in Landfill Waste	The Rhoades School	Hunker
794	Malveda	Stephanie	8	Solar-Powered Desalination	St. Didacus Parish School	Blickenstaff
795	Mascorro	Jaden	8	The Effect of Tenebrionidae Larvae on the Rate of Styrofoam Consumption	Rancho del Rey Middle	Osuna
796	Nguyen	Cong	8	Soak Up the Grease	Wangenheim Middle School	Mendibles
797	Noriega	Samantha	8	What is the Affect of Different Contaminants on the Life of Zooplankton?	Chula Vista Middle	Tom
798	Perez	Emma	8	Whats Hiding On Your Sink	Chula Vista Middle	Saclauso-Caro
799	Peterson Williams	Kate Maya	8 8	Sifting Sand: Documenting Plastics Pollution at Moonlight Beach	The Rhoades School	Hunker
800	Podlich	Kaitlyn	7	Investigating Water Quality at Buena Vista Lagoon	The Rhoades School	Hunker
801	Rodriguez	Sofia	8	The Degradation Process: Composting; How Fast Do Different Compost Mixtures Decompose?	Coastal Academy	Biernacki
802	Ruppert	Joy	8	Effluent Effects: Examining Water Quality at Moonlight Beach	The Rhoades School	Hunker

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Junior Division – Environmental Sciences and Management (cont'd)

803	Tapia	Tiffany	8	Desalinating Saltwater	Chula Vista Middle	Tom
804	Tianshi	Kyle	7	Detecting Microscopic Particles in Drinking Water	The Cambridge School	Mayne
805	Trojanowski	Oliver	8	How Toxic is Our Stormwater Runoff?	St. John School - Encinitas	Heins
806	Usman	Haroon	7	Biodegradable Plastics	Bright Horizon Academy	Naserelddin
807	Vazquez	Joey	7	Going Green And Everyday Life: Eco-Friendly vs. Conventional Detergents	Wilson Jr. High	Shiffer
808	Worman	Caroline	8	The Effectiveness Of Eco-Friendly Filters On Escondido Creek Water Quality	The Rhoades School	Hunker

Junior Division – Mathematical Sciences

813	Dimenstein	Netanel	8	Artificial Intelligence: Sports Stats	Soille San Diego Hebrew Day School	Bessler
814	Lopez	Ayari	7	Mathematical Modeling	Santa Fe Christian Schools	Culley

Junior Division – Medicine and Health Sciences

818	Arya	Ayden	8	A Hard Pill to Swallow	Soille San Diego Hebrew Day School	Bessler
819	Banuelos Hernandez	Isabela Renata	8 8	Blood Coagulation	Our Lady of Mount Carmel	Pereyra
820	Belbese	Haya	8	The Road to the Cure of Alzheimer's	Bright Horizon Academy	Naserelddin
821	Broudy	Benjamin	8	Are You Sweating Out Your Money	Soille San Diego Hebrew Day School	Bessler
822	Bruce	Isabel	8	Tea Tree Oil vs Isopropyl Alcohol: Eliminating Microbes on Medical Devices	The Rhoades School	Hunker
823	Bundogji	Danna	8	Is Biotin the Answer? Planaria and Nervous Tissue Regeneration	Bright Horizon Academy	Naserelddin
824	Casta	Carlos	7	What Effect Does Fluid Have on Sprinting	St. Therese Academy	Peterson
825	Castellanos	Tanner	8	How Does Screen Time Effect Our Minds and Bodies?	St. John School - Encinitas	Heins
826	Daw	Arianne	8	How do Genetics Affect the Way People Respond to Drugs?	St. Rita's School San Diego	Rice

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Medicine and Health Sciences (cont'd)						
827	Do	Cameron	7	Tackling Concussions: Testing the	The Rhoades School	Hunker
	Do	Christopher	8	Effectiveness of Headgear to Reduce Displacement		
828	Ehsan Nieves Ellis	Victoria Roeszele	8	Assessing Responses to Music in Alzheimers and Dementia Patients	The Rhoades School	Hunker
829	Ellis	Lia	8	Gemcitabine Fights Cancer Cells	Soille San Diego Hebrew Day School	Bessler
830	Franco	Nevaeh	8	The Power Of Tums	Chula Vista Middle	Salcauso-Caro
831	Halac	Amanda	8	Are Fingerprints Inherited?	De Portola Middle	Bridges
832	Hogan Severinghaus	Kaden Alexander	8 8	A Burning Question: Quantifying Levels of Particulates from Fireplace Emissions	The Rhoades School	Hunker
833	Malone	Kyla	7	What a Pain	Carlton Hills Middle	Ducharme
834	Maudal	Ava	7	The Science of Fingerprints	St.John School - Encinitas	Heins
835	McCarthy	Susan	7	Which Drink Affects Teeth (represented by hard-boiled eggs) Most?	St. Therese Academy	Peterson
836	McComic	Sinclair	7	Not White! What a Fright!!	St. Gregory the Great Catholic School	Ryan
837	Meza	Mia	7	Are Your Eyes Playing Tricks On You?	Barbara Worth Junior High	Kappeler
838	Pallenciaoe	Anna	8	Which Beverage Erodes Tooth Enamel the Most?	St. Therese Academy	Peterson
839	Polanco	Cielo	8	Subscription to Infection; MD vs DDS	St. Rose of Lima	Urbiztondo
840	Prentice	Lorraine	7	Which Flour Has the Most Gluten	Nazareth School	Reed
841	Quezada	Isabelle	7	Are Fingerprint Patterns Inherited	St. Rita's School San Diego	Rice
842	Ramirez	Isabella	8	Soda's Effect on Bones	Chula Vista Middle	Tom
843	Rizo	Petunia	8	Brainwave Differences Based on Soundscapes of Nature and Urban Areas	Mount Everest Academy	Negus
844	Saade	Daniel	8	Can You See It Moving?	Soille San Diego Hebrew Day School	Bessler
845	Swearingen	Safiya	8	The Power of Nuts	Chula Vista Middle	Saclauso-Caro
846	Taitano	Parker	8	Does Double-Dipping Actually Spread Germs	St. Peter the Apostle School	Jones
847	Walker	Kate	7	How Does Different pH Environments in the Stomach Affect the Dissolving of Iron?	Nazareth School	Reed

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Medicine and Health Sciences (cont'd)						
848	Wells	Hudson	7	Does a Helmet Really Protect a Football Player's Brain?	St. John School - Encinitas	Heins
Junior Division – Microbiology						
853	Adato	Ariel	8	Plants That Purify	Soille San Diego Hebrew Day School	Bessler
854	Al-Delaimy	Meryem	7	Effect of Antioxidants on Yeast Cells	Bright Horizon Academy	Naserelddin
855	Angulo	Matthew	7	Be Water Wise	Corfman School	Leon
856	Buechs Garcia	Eoin Shane	7 7	Bacteria Busters	St. John School - Encinitas	Heins
857	Cavaco	Kanoa	8	Will UVA Lights or the Boiling Method Eliminate More Bacteria?	Chula Vista Middle	Tom
858	Chamberlin	Nicole	7	Bacteria in a Home	St. Didacus Parish School	Blickenstaff
859	Darling	Abigail	8	Does the Dog or Human Mouth Have More Bacteria?	Mount Helix Academy	Hudson
860	De Guzman	Ryan	7	School Makes Me Sick: Which School Area Grows the Most Bacteria?	Good Shepherd Catholic School	McNeil
861	Dellacato	Casey	8	Preserving Food	St. Didacus Parish School	Blickenstaff
862	Denning	Camille	7	The Bacteria on a Kitchen Sponge	All Hallows Academy	Humkey
863	Fan	Kara	8	Nanoparticles Liquid Bandage	Mesa Verde Middle	Bird
864	Flores	John Matthew	8	The Comparison of Bacteria Presence on Phones and Computer Keyboards	Wangenheim Middle	Mendibles
865	Fries	Sam	7	Water Wellness	St. Didacus Parish School	Blickenstaff
866	Fung Thacker	Pascale Elizabeth	8 8	Investigating Antimicrobial Properties of Local Plant Species	The Rhoades School	Hunker
867	Gan	Kelly	8	Natural Antibiotic Effects of Honey, Garlic, Lemon, and Ginger against Escherichia Coli	San Diego Jewish Academy	Deveau
868	Garcia	Jasmin	8	Dirty Money: Pennies vs. Dimes	Chula Vista Middle	Saclauso-Caro
869	Gorzelski	Nathan	8	Mold Mayhem	De Portola Middle	Yepiz
870	Griffin	Lindsay	8	Boys vs. Girls: Who Has the Grossest Phone?	De Portola Middle	Bridges
871	Howard	Sophie	7	The Five Second Rule	St. John School - Encinitas	Heins
872	Ismail	Fatuma	7	The Effect of Nanoparticles on Living Organisms	Bright Horizon Academy	Naserelddin

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Microbiology (cont'd)						
873	Khan	Safwa	7	Essential Oils on Bacteria	Bright Horizon Academy	Nasereiddin
874	Kleinman	Matisyahu	8	Is it Okay to Dip the Chip?	Soille San Diego Hebrew Day School	Bessler
875	Lawson	Eva	7	How Moisturizing Is Your Moisturizer?	St. Gregory the Great Catholic School	Ryan
876	Lerner	Jordan	8	Spoiler Alert!	Soille San Diego Hebrew Day School	Bessler
877	Ligeralde	Racel	7	Bacteria Found in Most Touched Household Surfaces	Good Shepherd Catholic School	McNeil
878	Ma'ake	Stefini	7	UVB Light Kills Bacteria	St. Didacus Parish School	Blickenstaff
879	Madrigal	Gabriela	8	Bacteria in Beach Water	St. Didacus Parish School	Blickenstaff
880	Meram	Samantha	7	5-Second Rule	Corfman School	Leon
881	Moryosef	Naomi	8	Water, Water, Everywhere, nor Any Drop to Drink?	Soille San Diego Hebrew Day School	Bessler
882	Norvell Rupesh	Willa Bhadra	7 7	CRISPR Challenge: Modifying Bacterial Strains To Evaluate Resistance To Streptomycin	The Rhoades School	Hunker
883	Osman	Shukriya	8	Do Antioxidants Prevent Chemotherapy Cell Toxicity?	Bright Horizon Academy	Nasereiddin
884	Rodriguez	Joel	8	Can Aloe Vera Juice Save Your Berries from Molds?	St. John of the Cross	Krumm
885	Ross	Brayden	8	Ice-Down, Bacteria Up: Microbial Growth in Poultry During Different Thawing Methods	Carlton Hills Middle	Ducharme
886	Salazar	Emily	7	Bacterial Growth in Water Bottles	St. Gregory the Great Catholic School	Ryan
887	Shakhman	Ethan	8	Should You Bring Your Toothbrush Case on Your Next Trip?	Soille San Diego Hebrew Day School	Bessler
888	Soe	Priyanka	8	Comparing the Efficacy of Backcountry Water Treatment Methods	The Rhoades School	Hunker
889	Tuscano	Erin Grace	7	Testing the Effectiveness of Oral Disinfectants	St. Michael Academy San Diego	Okuley
890	Tyson	Mary	7	One Burger, Hold the Bacteria	All Hallows Academy	Humkey
891	Wrotslavsky	Savannah	8	Zapping Bacteria	Soille San Diego Hebrew Day School	Bessler

Junior Division – Physics and Astronomy

896	Barker	Aharon	8	Rocket Fins	Soille San Diego Hebrew Day School	Bessler
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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Physics and Astronomy						
897	Broudy	Reuben	8	Modelling Minimum Voltage to Acoustically Levitate Non-spherical Objects at Near-wavelength Dimensions	Soille San Diego Hebrew Day School	Bessler
898	Cintron-Senturia	Carlo	8	What Kind of Advantage Are You Given from Mechanical Advantage?	De Portola Middle	Bridges
899	Dullano	Isabella	8	Testing a Homemade Magnetometer	St. Michael Academy San Diego	Okuley
900	Figueroa-Valdez Manzo	Carlos Sebastian	8 8	How are Magnets Affected by Changes in Temperature?	Our Lady of Mount Carmel	Pereyra
901	Gonzales	Xavier	7	Bowling Balls vs Their Weight	Nazareth School	Reed
902	Greeny	Lauren	8	Physics of the Violin	Farb Middle	Huntington
903	Hernandez	Marcos	7	Dimples on a Golf Ball and Distance	St. Didacus Parish School	Blickenstaff
904	Miles	Keira	7	Bottle Rocket Blast Off!	St. Therese Academy	Peterson
905	Pabloff	Rodolfo	8	Retaining Heat: Using Insulation to Keep Water Warm	Coastal Academy	Biernacki
906	Pasternack	Eliad	8	Electromagnetism	Soille San Diego Hebrew Day School	Bessler
907	Ritchie	Audrey	8	How the Inflation Pressure of a Ball Affects How Far It Goes	De Portola Middle School	Yepiz
908	Rodriguez Delgado	Carlos	8	Paper Retaining Water	Eastlake Middle	Martinez
909	Silva	Dharla	8	Using a Digital Camera to Measure Skyglow	Our Lady of Mount Carmel	Pereyra
910	Tarle	Candace	7	The Force is Strong with...Softball	St. John School - Encinitas	Heins
911	Teran	Valeria	7	Objects In Motion	St. Didacus Parish School	Blickenstaff
912	Thompson	Bobby	8	The Effect of Device Type on Radio Frequency	City Tree Christian School	Lee
913	Weckmann	Jace	8	How Does the Skin Texture Quality of a Baseball Affect the Distance a Ball Travels?	Wangenheim Middle	Mendibles

Junior Division – Plant Sciences

918	Almada	Alejandro	8	Bio Ball	St. John of the Cross	Krumm
919	Becker	Blake	8	Soil Grown Versus Hydroponic Grown Plants	St. John School - Encinitas	Heins
920	Bomar	Joseph	7	Fertilizer Experiment	Mount Helix Academy	Hudson

65th Annual Greater San Diego Science & Engineering Fair - 2019

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Plant Sciences (cont'd)						
921	Chakamian	Kian	8	Predicting Implications of OQDS on San Diego County Olive Trees	The Rhoades School	Hunker
922	Chine Yang	Jack	8	Surveying Slope Survivors: Native Plants	The Rhoades School	Hunker
		Eric	8	Prevalent to Beach Bluffs		
923	Curtis Watson	Cole	8	Regular Agriculture vs. Aquaponics	St. John School - Encinitas	Heins
		Zachary	8			
924	Datiles	Czarina	8	How Effective is Lemongrass Oil in Killing Mosquito Larvae Compared to Citronella Oil?	St. Therese Academy	Peterson
925	Edmonds	Emma	7	The Effects of Tropisms on Root Orientation: A Multivariable Approach	The Cambridge School	Mayne
926	Esch Millikin	Adam	7	Lichen Diversity: An Environmental Indicator of Air Quality	The Rhoades School	Hunker
		Grace	7			
927	Garcia	Sivan Hendric	8	The Effect of Scarification Methods on the Germination Rate of Seeds	Wangenheim Middle School	Mendibles
928	Gerson	Dalia	8	How Glucose Affects Plants	San Diego Jewish Academy	Deveau
929	Hamel	Scarlett	8	Do Plants Grow Better in Structured Spring Water, Microwaved Tap Water, or Bottled Water?	Mount Helix Academy	Cohen
930	Jackson	Kelli	8	Coffee's New Purpose: Using Coffee to Increase Plant Growth	Coastal Academy	Biernacki
931	Lehmann Shaul	Isabel	7	Pine Cone Scales: Verifying Fibonacci Sequences in Nature	The Rhoades School	Hunker
		Abigail	7			
932	Lemus	Alyssa	8	Capillary Action	Barbara Worth Junior High	Calip
933	McGillis Mills	Gabby	7	What Type of Water is Best for Plants?	St. Michael's School Poway	Poling
		Emerson	7			
934	Moreno-Magoni	Camila	7	How Do Different Liquids Affect How a Plant Grows?	St. Therese Academy	Peterson
935	Newton	Wesley	7	Algae Under Light	St. Didacus Parish School	Blickenstaff
936	Ortiz	Andreina	7	The Best Mulch for Plants	St. Didacus Parish School	Blickenstaff
937	Potter	Claire	8	Acid Rain, Killing Our Crops	St. Didacus Parish School	Blickenstaff
938	Rincon-Castellanos Sanchez	Diego	8	Aquaponics	Our Lady of Mount Carmel	Pereyra
		Eduardo	8			
939	Saiki	Brandon	7	Keeping Your Dog and Lawn Happy and Healthy	St. Michael's School Poway	Poling
940	Savage	Isaac	8	Natural vs Artificial Fertilizer	St. Didacus Parish School	Blickenstaff

65th Annual Greater San Diego Science & Engineering Fair - 2019

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Junior Division – Plant Sciences (cont'd)

941	Shallan	Felicity	7	Is Worm Castings Tea Better Than Miracle Gro	Mount Helix Academy	Cohen
942	Thiss	Jessica	7	Which Vinegar Kills Grass Better: 5% or 20%	Mount Helix Academy	Hudson
943	Verdadero	Danelle	8	How Does Magnetism Affect the Direction a Plant Grows?	Wangenheim Middle	Mendibles
944	Walley	Christina	7	Amazing Aquaponics, A Pretty Sweet Project	Coastal Academy	Biernacki

Junior Division ONLY – Product Testing/Consumer Sciences

949	Ambrosius	Tatiana	7	Racing Suits: What Are They?	St. Therese Academy	Peterson
950	Baterina Lingham	Hanna Lilliana	7 7	Name Brand vs. Off Brand Snack Comparison	St. Michael's School Poway	Poling
951	Brenes	Natalie	8	What Material Makes the Best Insulator for Cold Liquids	St. Pius X School	Doyle
952	Cappiello Goswami	Griffin Sameer	7 7	DIY Pool Covers for Controlling Water Temperature and Evaporation	The Rhoades School	Hunker
953	Carvajal	Antonio	7	Yeasty Goodness	St. Pius X School	Doyle
954	Casillas Russell	Elise Elizabeth	8 8	Which Makeup Wipe Works the Best ?	Carlton Hills Middle	Ducharme
955	Diaz	Allyson	7	Testing Food Glucose Levels and Their Effects on Eggshells	St. Pius X School	Doyle
956	Estudillo	Adela	8	Which Sunscreen is Best?	St. Didacus Parish School	Blickenstaff
957	Fiegl	Anneliese	7	To Bag or Not to Bag (It's Your Choice)	St. Michael's School Poway	Poling
958	Finger	Sydney	7	Charged or Overcharged	Carlton Hills Middle	Ducharme
959	Flores	Elena	7	Makeup Testers	Corfman School	Leon
960	Gonzalez	Ady	8	Evaluating Electrolytes in Drinkable Fluids	Chula Vista Middle	Saclauso-Caro
961	Gonzalez Sierra	Sarai Romina	7 7	Trash Bag Breaking Point	Our Lady of Mount Carmel	Pereya
962	Guenniche	Sophie	8	Pack It Up	Soille San Diego Hebrew Day School	Bessler
963	Hammad	Tasmeya	7	Spices on Bacteria	Bright Horizon Academy	Naserelddin

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division ONLY – Product Testing/Consumer Sciences (cont'd)						
964	Henry	Sadie	8	Moisturizers for Swimmers	St. Didacus Parish School	Blickenstaff
965	Hussain	Daanya	7	Which Home Remedy is Better for Cholesterol?	Bright Horizon Academy	Nasereiddin
966	Johnson Shaikhvand	Kaylee Collette	7 7	Perfect Polish	St. Michael's School Poway	Poling
967	King	Angela	7	Helpful or Hurtful? The Study of EMF Defenders	Santa Fe Christian Schools	Culley
968	Magana	Paris	8	Comparing Glucose Levels in Homemade and Commercial Brand Smoothies	Chula Vista Middle	Saclauso-Caro
969	McKamey	Trey	8	Child Safety Locks	St. Didacus Parish School	Blickenstaff
970	Montejo Nasry	Rosy Margaret	7 7	Soaking Up Science	St. Peter the Apostle School	Jones
971	Naughton	Sasha	8	What Fabric is Affected the Most by Kool-Aid	St. Mary Star of the Sea School	Alonso
972	Nepomuceno	Lea	8	Different Percentages of I-ascorbic Acid Affecting the Percutaneous Absorption of Frozen Pig Skin Tissue	Wangenheim Middle	Mendibles
973	Newton	Kaylee-Grace	8	High End or Drug Store?	Farb Middle	Huntington
974	Nguyen	Joseph	7	Swim Caps: Latex or Silicon	Nazareth School	Reed
975	Noriega	Kristen	8	Premium or Great Value: Can You Tell the Difference?	Our Lady of Guadalupe Academy	Patton
976	Payne	Mercedes	7	Which Brand of Correction Tape is Best for Common Use?	Nazareth School	Reed
977	Prevost Zdanowski	Mason Jack	8 8	Using Low VOC Natural Paints and Sealants to Waterproof ECOR	The Rhoades School	Hunker
978	Romo	Araceli	8	Effects of Temperature on Fabric Fibers	Chula Vista Middle	Saclauso-Caro
979	Tadesse	Wegahta	7	Strongest Glue	St. Didacus Parish School	Blickenstaff
980	Usmani	Arissa	7	Homemade vs. Store Bought Detergents: Which Works Best with Fabrics?	Bright Horizon Academy	Nasereiddin
981	Walp	Michael	7	Which Surf Wax Grips the Best	Nazareth School	Reed
982	Willert	Frederick	8	Breaking Glass	Mount Helix Academy	Hudson
983	Wolter	Amy	7	A Comparison of Hand Warmers	Santa Fe Christian Schools	Culley
984	Zabrocki	Joey	7	Flex Tape vs. Duct Tape	All Hallows Academy	Humkey

65th Annual Greater San Diego Science & Engineering Fair - 2019

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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SIXTH GRADE SHOWCASE

Sixth Grade Showcase -- Chemistry

1501	Burns Dunford	Leah Ava	6 6	Tempering Chocolate	Marston Middle	Holland
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Sixth Grade Showcase - Engineering: Electrical and Mechanical

1505	Cochran Robinson	Jade Lauren	6 6	Lemonade Machine	Marston Middle	Holland
1506	Larsen Durfee	Ty Keegan	6 6	Multi Purpose Catapult	Marston Middle	Holland
1507	Denny Wagoner	Samantha Chloe	6 6	The Green Robot	Marston Middle	Holland

Sixth Grade Showcase - Engineering: Energy and Transport

1510	Cota Llanos	Levi Alvaro	6 6	Hovercraft	Marston Middle	Holland
1511	Steward	Taylor	6	Solar Air Heater	Marston Middle	Holland
1512	De Soto Horstman	Logan Henry	6 6	The Invisible Car	Marston Middle	Holland

Sixth Grade Showcase - Environmental Sciences and Management

1515	Santos Sweat	Gabi Ayla	6 6	Soil Collecting Robot	Marston Middle	Holland
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Sixth Grade Showcase - Medicine and Health Sciences

1520	Synn	Melinda "Michi"	6	PMA Stimulated Differentiation of THP-1 Cells Into Macrophages and Dendritic Cells	Solana Pacific Elementary	Sung
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The Greater San Diego Science and Engineering Fair

Presents

Science Fair Family Day



Come join us for a day of Science and entertainment!

Sunday, March 17, 2019-10:00 am to 3:00 pm
All Day Fun and Games for the whole Family!

PRESENTATIONS, ACTIVITIES AND DEMONSTRATIONS

11 AM – 12 PM: **SAN DIEGO ZOO ANIMAL AMBASSADORS**

Zoo Educators will bring 4-5 Zoo Ambassadors to visit the science fair! Come join them for a closer look at these special zoo visitors!

12 PM – 1 PM: **ROBOTICS DEMONSTRATIONS**

Come see local high school robot residents perform feats of wonder! Meet the creators and learn how to control the robots!

ALL DAY:

CABRILLO NATIONAL MONUMENT

Learn about tide pool monitoring, invasive insects, and more! Engage with 3D bio models of tide pool organisms!

SCAVENGER HUNT

Think you know your way around our fair? Come find out and show us what you can discover!
(CANDY PRIZES GIVEN)

SCIENCE ACTIVITIES

Come make your own slime to take home; create unique bracelets from our UV beads; see a rainbow made from cabbage juice; experience density at work with our density tower phe-

Located at the Balboa Park Activity Center, 2145 Park Blvd., San Diego, CA 92101-4753

Visit our science fair gift shop where you will find T-shirts, gifts and more

Traffic and Parking Information for Judging Day
March 13, 2019

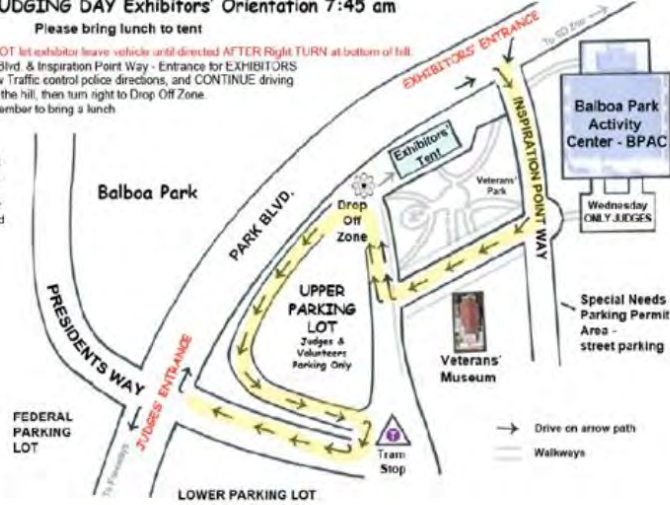
Morning Traffic Flow

EXHIBITORS' ENTRANCE - WEDNESDAY MORNING (arrive between 7:10 - 7:40 am)
JUDGING DAY Exhibitors' Orientation 7:45 am

Please bring lunch to tent

DO NOT let exhibitor leave vehicle until directed AFTER Right TURN at bottom of hill.
Park Blvd & Inspiration Point Way - Entrance for EXHIBITORS
Follow Traffic control police directions, and CONTINUE driving down the hill, then turn right to Drop Off Zone.
• Remember to bring a lunch

To facilitate student drop-off and safety, students need to bring a folding chair on Tuesday (labeled with their name).



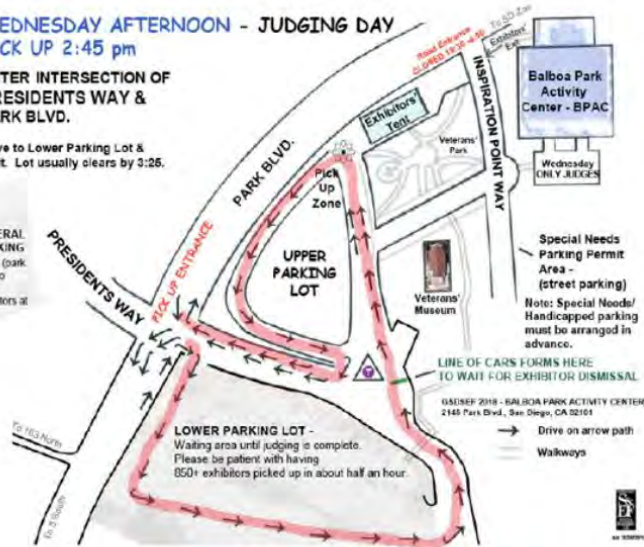
Afternoon Traffic Flow

WEDNESDAY AFTERNOON - JUDGING DAY
PICK UP 2:45 pm

ENTER INTERSECTION OF PRESIDENTS WAY & PARK BLVD.

Drive to Lower Parking Lot & Wait. Lot usually clears by 3:25.

FEDERAL PARKING LOT (park here to meet exhibitors at tent)



65th Annual Greater San Diego Science & Engineering Fair - 2019

About the Greater San Diego Science & Engineering Fair



Our Mission

To provide a forum encouraging young minds in their independent research in science, technology, engineering, and mathematics - and inspiring the next generation of scientific thought, discovery, and innovation.

This year, the GSDSEF is celebrating its 65th Annual Science & Engineering Fair. The GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR (GSDSEF) started planning for its first Science Fair in 1954, and since then has provided an inspiring experience in science and engineering for thousands of San Diego and Imperial County students, motivating them to pursue careers in science, technology, engineering, and mathematics. We provide a regional competition that challenges students to go beyond classroom studies to do independent research – to ask compelling questions, design and implement innovative solutions, and present and defend results to judges who are professionals in their fields.

The GSDSEF students' STEM achievements showcase how young minds can make an impact in the present and future. *...Inspirational...motivational...transformative...* For over 65 years, the GSDSEF has been encouraging young minds in their pursuits that will define the next generation of scientific thought, discovery, and innovation.

Who May Participate in the GSDSEF

Any student in grade 7 through 12 who attends public, private, parochial or home schools in San Diego County or Imperial County may enter a project for screening and a possible invitation to the GSDSEF. This year we are having a Sixth Grade Showcase. Although they are not being judged this year, they will be recognized at the Awards Ceremony for their participation.

Awards and Benefits of Participating in the GSDSEF

- The most important benefit for all student exhibitors is the opportunity to display their projects, meet with other exhibitors and share projects and results with professional scientists and engineers.
- A certificate of merit is given to each exhibitor in recognition of his/her efforts.
- Exhibitors are given opportunities to attend special scientific tours and several Balboa Park museums during Science Fair week.
- First, second, third and fourth place ribbon awards are given for projects in each category in both Senior and Junior Divisions.
- Four Senior and Four Junior Division Sweepstakes Runners-up receive cash awards.
- Four Junior Division Sweepstakes winners receive cash awards.
- Six to eight Senior Division Sweepstakes projects are awarded. Four Senior Division Sweepstakes projects receive college scholarship awards and the opportunity to compete in the INTEL International Science and Engineering Fair (ISEF) in May 2019 in Phoenix, Arizona. One Senior Division Sweepstakes winner receives a scholarship from AFCEA.
- Engraved plaques are given to all Sweepstakes winners, alternates and runners-up.
- Other awards, presented to student exhibitors individually on stage, include: Fred H. Rohr Memorial Award, Reuben H. Fleet Memorial Award, Mickey Award, Ronald Domb Memorial Award, Professional Engineers in California Government Scholarships, BD Awards, San Diego Zoo Global Award, and the Student Leadership Board Awards.
- 60 Professional Societies provide over 150 special awards and/or scholarships.
- Junior and Senior Division Teacher of the Year Awards are selected among nominations made by science fair participants and are given a cash award provided by the Barbara Friedman Foundation.

There are four main divisions in the GSDSEF:

Junior Division Life Sciences (Grades 7— 8); Junior Division Physical Sciences (Grades 7—8)
Senior Division Life Sciences (Grades 9—12); Senior Division Physical Sciences (Grades 9—12)

Our 16 Project Categories

- | | | |
|----------------------------------|--|---|
| • Animal Sciences | • Engineering – Electrical and Mechanical | • Medicine and Health |
| • Behavioral and Social Sciences | • Engineering – Energy and Transport | • Microbiology |
| • Biochemistry | • Engineering – Materials and Bioengineering | • Physics and Astronomy |
| • Chemistry | • Environmental Sciences and Management | • Plant Sciences |
| • Computer Science | • Mathematical Sciences | • Product Testing/Consumer Science (Junior Division Only) |
| • Earth and Planetary Science | | |

65th Annual Greater San Diego Science & Engineering Fair - 2019

Special Recognition and Thanks

The Board of Directors and the Management Committee would like to thank the following individuals, groups and organizations for contributing time, talent, financial support, in-kind support and volunteers to our Science Fair.

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Barbara Friedman Family Foundation
Sony Playstation
AFCEA
San Diego Taiwanese Cultural Center
Qualcomm
UTC Aerospace Systems
ONR (Office of Naval Research)
Viasat
Takeda California
San Diego Zoo Global Wildlife Conservancy Friends of Science
San Diego City Parks and Recreation
Friends of San Diego

The GSDSEF is an Affiliate of the following: Intel International Science and Engineering Fair, Broadcom Masters and the California Science and Engineering Fair



Area Merchants, Businesses, Community Organizations

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BD Volunteers
Copy-It Printing
ONR (Office of Naval Research) Volunteers
Raphael's Party Rentals
San Diego Zoo Global-Education Department
San Diego State University, Viejas Arena
San Diego State University, Parking and Traffic
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The San Diego
Union-Tribune

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Wendy Gay

Judging

Coordinator: Larry Nordell, *Marine Tech Soc.*
Coordinator: Vickie Driver, *Zim Biosciences*
Dr. Annalese Kapteina, *MD*
Dr. Peter Salamon, *UCSD*
Dr. Donna Kritz-Silverstein, *UCSD*

Logistics

Kevin Guentner, *Estate Services*
Chris Guentner

Outreach

Dr. Erika Pollner, *BD*
Dr. James Kuo, *Athena Bioventures*
Dr. Geraldine Kuo, *Athena Bioventures*
Steve Rodecker

Parking & Traffic

Dr. James Kuo, *Athena Bioventures*
Dr. Geraldine Kuo, *Athena Bioventures*

Professional Societies

Adina Sobo, *Morse High School*
Sejal Pabari

Project Advice & eMentoring

Dr. Mark Atkins, *Ace Parking*

Project Size & Safety

Hal Slater

School Relations

Wendy Gay
Steve Rodecker
Liaison SDCOE: John Spiegel
Liaison ICOE: Janet Estrada
Liaison Diocese: Julia Cantillion

Student Scientific Tours

Maria Pankau
Don Pankau

Screening

Coordinator: Rose Armour
Dr. Donna Kritz-Silverstein, *UCSD*

Scientific Review Committee

Phil Gay, Wendy Gay
Steve Rodecker, *SDSEA*

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Rachana Madhukara, *VP Media/Comm*
Julia Situ, *VP Outreach*
Ananya Rao, *Secretary*
Ken Lew, *Treasurer*

Volunteer Coordinating

True Xiong, *Sony Playstation*
Ken Lew, *Qualcomm*

Website Design & Maintenance

Designer: Dale Clarke, *Intuit*
Jelen Rodecker
Douglas Smith, *Leidos*
William Proffer, *Leidos*

✦

The Board of Directors and Management Committee members and Committee members are volunteers who give their time and expertise to produce the Greater San Diego Science & Engineering Fair.



OFFICERS

Alina Pollner – President
Julia Situ – Vice President of Outreach
Rachana Madhukara – Vice President of Activities
Ananya Rao – Secretary
Ken Lew – Treasurer

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Marc Kuo
Atulya Mandyam

Axel Marquez
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Raj Pabari
Rakesh Reddy
Aadil Rehan
Isaac Reyes
Anna Sohn
Ziyad Soliman
Edmund Sumpena
Elizabeth Thacker
Emily Tianshi
Vivek Vijayakumar
Macey Yang

The Student Leadership Board (SLB) is the Fair’s Student Honor Society. We:

- actively participate in the planning of the Fair at monthly meetings during the year
- plan and present Science Fair “How To” workshops for student exhibitors throughout the year (four this year!)
- help design the current year’s T-shirt logo
- assist with many aspects of the Fair itself, including setup/teardown, check-in, project size and safety check
- plan, conduct, and oversee Family Science Day activities

The SLB is a great place for students of all backgrounds to come together and enjoy science, technology, engineering and mathematics while polishing their leadership skills.

More about SLB? Find us at the Fair (we wear cool T-Shirts) or email us at gsdsefslb@gmail.com

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AWARDS CEREMONY

March 14, 2019 – San Diego State University Viejas Center

Presenting Sponsor: *BD*

PROGRAM

- 5:30 pm – Viejas Arena will open for the Awards Ceremony, *Food Concessions will be available*
- 5:30 pm – Professional Societies Awards passed out and listed on screen
- 6:00 pm – National Anthem, Pledge of Allegiance, Opening and Announcements
- 6:15 pm – Keynote Speaker: Robert Sobie, BD
- 6:20 pm – Presentation of Special Awards
Presentation of Categorical Place Awards
Presentation of Sweepstakes Awards

Special Acknowledgements and Appreciation

City of San Diego Parks & Recreation

Herman Parker, Dir. of Parks & Recreation
Berenecé Mora, Recreation Ctr Director
Brett Stanley, Asst Center Director, BPAC
Vicki Hara, Area Manager



Viejas Arena, SDSU

Aaron Woods

Photography

Elizabeth Traugher

Balboa Park Activity Center (BPAC)

John Gascon
Latece Foster



Directory Cover Design/SDUT AD:

Donna Spevack

The Balboa Park Rangers

John Anderson
Balboa Park Rangers

Directory

Jelen Rodecker

SPECIAL RECOGNITION

Morse High School JROTC Color Guard, who participates at the Awards Ceremony
Morse High School Hungry Tiger Restaurant for their catering services during Fair week

***Our gratitude
to the volunteers who help in
countless ways to produce the
65th Annual GSDSEF!***



**If you would like to
volunteer, sponsor the Fair,
or donate money, please go
to www.gsdsef.org**

Special Appreciation to

***A. Dale Clarke, of Intuit, for volunteering many, many hours to create and
develop the online screening and application.***

*

Emile Davis, of BD, for his tech expertise for the Awards Ceremony presentation.

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How Projects are Invited to Participate in the GSDSEF

After participating in their school or district-level science fairs, top projects are then recommended to go through the GSDSEF screening process. Students create a 10-slide digital presentation which is screened by professionals from the science, engineering, technology, and education fields. Projects that are “recommended” are invited to participate in the GSDSEF. In 2019 approximately 750 students submitted their project for screening and screeners spent a hundred hours or more each reviewing presentations for uniqueness and adequate scientific method/engineering design principles.

Who Judges the GSDSEF



At the GSDSEF, nearly 400 judges from the science and education communities evaluate projects and interview students to determine place awards. These judges are scientists, engineers, technology experts, university professors, specialists and retired educators – the majority of whom have doctorates, masters, or bachelor degrees in their respective fields. Additionally, sixty professional societies and organizations provide more than 150 special awards and scholarships. The Judges for Sweepstakes Awards have 5 or more years of science fair judging experience.

How Projects are Judged for Category Awards:

The GSDSEF projects are judged by Standards aligned with the INTEL International Science and Engineering Fair and Broadcom Masters.

1. Creativity –

Originality of problem, uniqueness of approach. The handling and interpretation of data should be commensurate with the grade level of the student. Ingenious use of equipment and materials is considered without regard to the cost involved.

2. Scientific Thought/Engineering Goals –

Scientific Thought: The project shows evidence of depth of study and effort in employing scientific procedures in the solution of a clearly defined problem including study of background, organized procedures, appropriate sampling, orderly recording and analysis of data and the formulation of logical conclusions. Engineering Goals: The project has a clear objective relevant to the needs of the potential user. The product or process has been tested and is workable and economically and ecologically feasible.

3. Thoroughness –

The study is complete within scope of the problem. Scientific literature has been searched and experiments have been repeated and careful records have been kept.

4. Skill –

Credit is given for special skills needed for the construction or use of equipment and for mathematical, computational, and observational and design skills.

5. Clarity –

The purpose, procedures, and conclusions are clearly explained orally and through a display. The project notebook is well organized, neat and accurate. Sources of ideas, data and assistance are clearly identified.

6. Teams –

The tasks and contributions of each team member are clearly outlined and both team members are familiar with all aspects of the project. The final work reflects the coordinated efforts of both team members.

✱

The GSDSEF Board of Directors and Management Committee would like to give a special recognition and thank you to the screeners who spend many hours reading hundreds of digital projects and taking the extra time to write comments to the students... to the judges who take the time out of their busy schedules to listen and talk to students, share their own passion for science and engineering, and encourage these talented young minds in their pursuits to be the next generation of scientific and technological discovery and innovation! ...AND to the teachers, students, and parents! Without all of your efforts, participation, and dedication there would be no fair !



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Professional Society and Recognition Awards

Each Professional Society or Organization determines their own judging standards based on their organization's criteria and award projects accordingly. They provide more than 150 special recognition awards and scholarships to students totaling over \$25,000. Professional Societies and Organizations may choose for GSDSEF to distribute awards and scholarships or they may choose to award students at their society's board meetings or banquets.

- American Chemical Society, San Diego Section
- American Institute of Aeronautics and Astronautics - San Diego Section
- American Society for Non Destructive Testing (San Diego Section)
- American Society of Civil Engineers
- American Society of Heating, Refrigerating, & Air Conditioning Engineers
- American Society of Materials International, San Diego Chapter
- American Society of Mechanical Engineers
- American Statistical Association, San Diego Chapter
- Armed Forces Communications and Electronics Association
- Association for Women in Science San Diego Chapter
- Becton Dickinson
- Biophysical Society
- Building Industry Association Cares
- California Academy of Nutrition and Dietetics, San Diego District
- California Association of Professional Scientists
- California Environmental Health Association - Southwest Chapter/County of San Diego, Department of Environmental Health
- California School Nurse Organization: San Diego/Imperial Section
- Fred H. Rohr Award from Collins Aerospace
- Friends of Famosa Slough
- General Atomics Sciences Education Foundation
- Health Physics Society (San Diego Chapter)
- Hillcrest-Mission Valley Lions Club
- Institute of Electrical and Electronics Engineers
- Journal of Youths in Science (JOURNYS), Scripps High School Branch
- Kaiser Permanente
- Marine Technology Society
- Price-Pottenger Nutrition Foundation
- Professional Engineers in California Government
- San Diego Astronomy Association
- San Diego Audubon Society
- San Diego Chapter of the Human Factors And Ergonomics Society
- San Diego County Dental Society
- San Diego County Optometric Society
- San Diego County Pharmacists Association
- San Diego County Water Authority
- San Diego for Science
- San Diego Post of the Society of American Military Engineers
- San Diego Psychological Association
- San Diego Science Educators Association
- San Diego Section of the International Dark Sky Association
- San Diego Shell Club
- San Diego Society of Health-System Pharmacists
- San Diego Zoo Global
- Scripps Institute of Oceanography Climate Science Award
- Scripps Research
- Sea World
- Sigma Xi: The Scientific Research Honor Society (San Diego Chapter)
- Society for the Advancement of Material and Process Engineering
- Society of Fire Protection Engineers, San Diego and Inland Empire Chapter
- Society of Toxicology: Southern California Regional Chapter
- Society of Women Engineers - San Diego County Section
- SPAWAR
- The City of San Diego's Environmental Services Department
- The Ron Orta Excellence in Biomedical Research Award
- Torrey Pines Docent Society
- United States Air Force
- United States Navy / Office of Naval Research
- WasteReuse Association - San Diego Regional Chapter

*The following **Special Awards and Recognition** are presented on stage during the Awards Ceremony:*



Becton Dickinson Award for "Advancing the World of Health"
 Fred H. Rohr Award
 Mickey Award
 Office of Naval Research
 Professional Engineers in California Government Scholarships
 Ronald Domb Memorial Award
 Reuben H. Fleet Memorial Award
 Student Leadership Board (SLB Awards)



Arthur Friedman Memorial Science Fair Teachers of the Year: Junior Division and Senior Division

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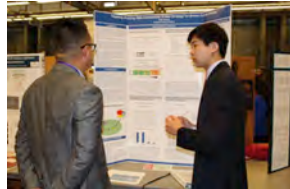
ORGANIZATIONS PROVIDING JUDGES TO THE 65th ANNUAL GSDSEF

The GSDSEF thanks the following companies, organizations, and schools for providing judges:

ABC Pediatrics	Golden West Solar	Ramona Research
AIPG	Grossmont Hospital	Resolute Therapeutics
Alliant International University	Haley & Aldrich, Inc	SAIC
American Incite	Halozyme, Inc	Salk Institute
Apricus Biosciences, Inc.	Hewlett Packard	SAMPE
Aptima	Hillcrest Internal Medicine	San Diego Audubon
Asamoto Engineering Consulting	HI-Q Environmental Products Co, Inc.	San Diego City College
Athena Bioventures	Hologic, Inc.	San Diego County Sheriff's Crime Lab
Aviva	Illumina	San Diego Gas and Electric
Awen Labs	Infrastructure Engineering Corporation	San Diego Jewish Academy
BAE Systems	Innovative Machinery Sales, Inc.	San Diego State University
Bailey Environmental Associates, LLC	Inova Diagnostics, Inc.	San Diego Zoo
Banck Clinical Research Center	Intertek Pharmaceuticals	Scripps Institute of Oceanography
Bastyr University California	Intuit Inc.	Scripps Research Institute (TSRI)
Becton Dickinson	Irvine Scientific	SDMC
Beckman Coulter	Islamic School of San Diego	Signet Accel
BEWiSE	J. Craig Venter Institute	Softcomm
Big Block Realty	JPL	Solar Turbines
Blue Path Solutions	JTY Tech	Sony Interactive Entertainment
Booz Allen Hamilton	JWT Worldwide	Southwest Fisheries Science Center
BRIEF	Kennedy/Jenks Consultants	Southwestern
California Senior Legislature	Knight and Associates	SPAWAR
CALTROP	Latham & Watkins LLP	SunPower
Catholic University Chile	Leidos	Tactical Engineering
CDM Smith	Little Dog Communications	Takeda California Inc
Cibus US LLC	Matthias C. Kurth, MD, PhD	TereoPneuma
Civic Knowledge	MedAvante-Prophase	ThinkGroup
CleanSpark	Mesa College	TissueNetix, Inc
Coldwell Banker Residential Brokerage	MilliporeSigma	Torrey Hills Technologies, LLC
Comtech Telecommunications	MITRE Corporation	US Geological Survey
County of SD Air Pollution Control Dist.	Nanalysis Corp	US Navy
CSU-San Marcos	National Weather Service	US Navy Surface Forces
CTC	Naval Health Research Center	University of California, San Diego
cypress semiconductor	NDP	UC San Diego Health
DAS	NOAA Fisheries	UC San Diego School of Medicine
Del Cover Woodworking	NOVO Engineering	Viasat, Inc.
Diane Ritchey-Andrews, Atty at Law	Optical Services Company	Vital Therapies
ecoATM	Orbis Intelligent Systems	WateReuse
EMD Millipore	Pfizer Inc.	Welch-Ilmvac Vacuum Pumps
Escondido Union School District	Photran	William P. Mann, MD
Fluid Components Intl	Point Loma Nazarene University	XRSciences
G2 Software Systems	Qualcomm, Inc.	Zim Biosciences
General Atomics Aeronautical Systems	QUASAR Federal Systems	Zova Systems, LLC
Genentech, Inc	Rady's Children Hospital	

Thank you to those who continue to support students and science and engineering education by judging at the Fair:

- Retired engineers, professors, scientists, medical doctors, researchers, and programmers from Janssen Research, University of Minnesota, Honeywell, Kaiser, Hewlett Packard, SAIC, SDSU, US Navy, UCSD, and other companies and organizations.
- Retired educators from El Cajon Valley School District, Escondido Union School District, Sweetwater Union High School District, San Diego City Schools, Grossmont Union School District, and the San Diego Jewish Academy.



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HIGHLIGHTS from the 2018 GSDSEF



- Over 800 students submitted their 10-slide digital presentation of their projects to be screened into the fair.
- More than 600 students were recommended to participate in the fair.
- 10 Screeners and 300+ judges reviewed projects, interviewed student-exhibitors, and decided on awards
- Over 60 Professional Societies who gave Special Awards and/or scholarships

Category Awards:

- **Junior Division:** 112 First Place, 137 Second Place, 152 Third Place, 50 Fourth Place
- **Senior Division:** 41 First Place, 31 Second Place, 20 Third Place Awards. 3 Fourth Place

Special Awards:

- 89 who qualified for the California Science and Engineering Fair
- 4 Senior Division Sweepstakes Award students who went to the INTEL International Science and Engineering Fair (ISEF) in Pittsburg, PA.
- 60 Junior Division Students who were eligible for the Broadcom Masters competition
- 150+ Special Awards totaling over \$15,000 from Professional Societies and Organizations

HIGHLIGHT RESULTS FROM AFFILIATE FAIRS

GSDSEF Results at the California Science and Engineering Fair (CSEF) 2018

934 students from 397 schools statewide participated at the CSEF in April, 2018. GSDSEF had 89 participants with 33 Categorical Award project winners. The CSEF awards the top four projects within each subject category and each age division as First Place, Second Place, Third Place, and Fourth Place. One project, and only one project, receives each award — there are no ties. Category Award winning projects receive the following cash awards. Team project cash awards are divided equally among each team member.

<u>Category</u>	<u>Jr. Div</u>	<u>Sr. Div</u>
First Place	\$250	\$500
Second Place	\$125	\$250
Third Place	\$75	\$125
Fourth Place	\$50	\$75

Category Place Awards won by GSDSEF Students:

- Junior Division: 0 First Place, 3 Second Place, 3 Third Place, 2 Fourth Place, 9 Honorable Mention
- Senior Division: 2 First Place, 2 Second Place, 2 Third Place, 3 Fourth Place, 6 Honorable Mention

Special Awards/Recognition Awards:

- 12 awards given to GSDSEF students totaling over \$12,000 in scholarships (from \$50 to \$5000).

Broadcom MASTERS Results:

Broadcom MASTERS® (Math, Applied Science, Technology and Engineering as Rising Stars), is the premier middle school science and engineering fair competition. In 2018, 2,537 middle school applicants from 48 states, 2 US Territories, 1 Department of Defense School competed at the national level. GSDSEF nominated 60 students for Broadcom MASTERS.



Top 300 Finalists from the GSDSEF:

- ◆ Kian Chakamian, Gr. 7, The Rhoades School
- ◆ Adrian Derderian, Gr. 8, Escondido Christian School
- ◆ Jasmine Elasaad, Gr. 8, The Rhoades School
- ◆ Anusha Kadiyala, Gr. 8, Bernardo Heights MS
- ◆ Atulya Mandyam, Gr. 8, Mesa Verde MS
- ◆ Rohan Murali, Gr. 7, Nazareth Catholic School
- ◆ Blake Scurry, Gr. 8, Thurgood Marshall MS
- ◆ Ziyad Soliman, Gr. 8, Islamic School of SD

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INTEL International Science and Engineering Fair (ISEF):

Nearly 1800 students from 75 countries and across the United States and its territories participated in the INTEL ISEF in Pittsburg, PA from May 13 - May 18, 2018. Congratulations to the 2018 Greater San Diego Science & Engineering Fair Sweepstakes Award winners: Philippe Hansen-Estruch, Rachana Madhukara, Alina Pollner, and Ronak Roy who represented the GSDSEF at the Intel ISEF in Pittsburgh, PA. They earned several major awards!

GRAND AWARDS:

Indo-U.S. Science & Technology Visit to India Award: Ronak Roy, Canyon Crest Academy

CATEGORICAL AWARDS:

BIOMEDICAL AND HEALTH SCIENCES:

Second Award of \$1,500: Philippe Hansen-Estruch, Gr. 12, Canyon Crest Academy

BIOMEDICAL ENGINEERING:

Intel ISEF **Best of Category Award** of \$5,000: Ronak Roy, Gr. 11, Canyon Crest Academy

First Award of \$3,000: Ronak Roy, Gr. 11, Canyon Crest Academy

MATHEMATICS:

Fourth Award of \$500: Rachana Madhukara, Gr. 10, Canyon Crest Academy



SPECIAL AWARDS:

American Mathematical Society, Second Award of \$1,000: Rachana Madhukara, Gr. 10, Canyon Crest Academy

REGENERON TALENT SEARCH

The Regeneron Science Talent Search is the nation's oldest and most prestigious science and math competition for high school seniors.

REGENERON TOP 300 from the GSDSEF

Huang, Allen, Gr. 11, Canyon Crest Academy

Roy, Ronak, Gr. 11, Canyon Crest Academy

Situ, Julia, Gr. 11, Canyon Crest Academy



The Regeneron TOP 40 finalists will travel to Washington, D.C. from March 7-13, 2019 where they will undergo a judging process and compete for more than \$1.8 million in awards. They will also have the opportunity to interact with leading scientists, meet with members of Congress and display their projects at the National Geographic Society on March 10. The finalists are each awarded at least \$25,000, and the top 10 awards range from \$40,000 to \$250,000.

REGENERON TOP 40 from the GSDSEF

Roy, Ronak, Gr. 11, Canyon Crest Academy

Situ, Julia, Gr. 11, Canyon Crest Academy



GSDSEF Student Exhibitors Tour Opportunities

San Diego Zoo "Inside Story Tour"

Friday, March 15, 2019 * 9:15 am – 12:30 pm * Cost: \$10.00 per student-exhibitor

We will depart from the front of the Balboa Park Activity Center (the Science Fair building) at 9:15 am. Students will be escorted by certificated teachers/chaperones. We will walk to the Zoo entrance where we will meet our Zoo Professional Educator Guides. The tour will include a bus ride with behind-the-scenes stops not open to the general public. The tour concludes at 12:00 pm, we will then walk back to the activity center for dismissal.



Under Pressure Tour - Private, Live Science Demonstration – 25 students minimum

Friday, March 15, 2019 * 11:15am – 3:30pm * Cost: \$15.00 per student exhibitor

We will depart from the BPAC at 11:15am. Students will walk to the Fleet Center for our special presentation **Under Pressure**. Students will be able to visit exhibits afterwards. We will return to the activity center for dismissal at approximately 3:30pm.

Education Tour - Exhibits, I-Max film "Dream Big" and special exhibit "Pause-in-Place"

Thursday, March 14, 2019 * 10:00am – 1:00pm * Cost: \$10.00 per student exhibitor

We will depart from the Balboa Park Activity Center at 10:00am. Student will be escorted by certificated teachers/chaperones. We will go directly to the theater to watch "Dream Big" then have time afterwards for the exhibits and Pause-in-Place. We will return to the activity Center for dismissal at approximately 1:00pm.

**San Diego Air and Space Museum Restoration/Basement Tour
18 students maximum**

Thursday, March 14, 2019 * 10:15 am – 1:30pm * Cost - \$15.00 per student exhibitor

We will depart the Balboa Park Activity Center at 10:15 am. Students will walk to the museum for an 11:00am tour of the restoration center and see how the museum exhibits are re-engineered for safe and optimum display. The tour will last two hours. We will return to the BPAC for dismissal at approximately 1:30pm.



Science Fair Students Enjoy Our Beautiful BALBOA PARK AND MUSEUMS

SPECIAL NOTE

The parent/guardian's signature on the Application for entrance to the GSDSEF provides the necessary permission for students to participate in GSDSEF tours and other activities in Balboa Park. **FOR ALL GSDSEF ACTIVITIES, A STUDENT-EXHIBITOR MUST FOLLOW THEIR SCHOOL'S FIELD TRIP and/or ATTENDANCE PROCEDURES.**

Exhibitors Badges give all student-exhibitors free admission to most of the museums in Balboa Park between the conclusion of Judging on Wednesday, March 13, 2019 and the end of Science Fair on Sunday, March 17, 2019. Please check the Balboa Park website at www.balboapark.org for a list of museums and their hours.



FREE ADMISSION TO THE MUSEUMS IS ONLY FOR STUDENT-EXHIBITORS WEARING HIS/HER EXHIBITOR BADGE AND NOT FOR FAMILY MEMBERS OR FRIENDS.

- ❖ To enter the San Diego Zoo for free using your badge, report to the Zoo Guest Relations window.
- ❖ Special Exhibits at a museum may require a fee (at the student price). This includes admission to the IMAX Theater at the Reuben H. Fleet Science Center.

FACILITIES AND MUSEUMS TO ENJOY WHILE AT BALBOA PARK:



Botanical Gardens
Mingei International Museum
Museum of Photographic Arts
Reuben H. Fleet Space Museum
San Diego Air & Space Museum
San Diego Art Institute
San Diego Automotive Museum

San Diego Hall of Champions
San Diego Model Railroad Museum
San Diego Museum of Art
San Diego Zoo Global
Timken Museum of Art
San Diego Automotive Museum
Veterans Museum & Memorial



We encourage students to enjoy Balboa Park with a friend or in a group

65th Annual Greater San Diego Science & Engineering Fair - 2019

SENIOR DIVISION

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Senior Division – Animal Sciences

101	Huang	Aaron	10	How is Anxiety in <i>C. elegans</i> Affected by Increased Signs of Predators?	Canyon Crest Academy	Haas
102	Rehan	Aadil	12	Of Mice and Movement: The Role of the Deep Cerebellar Nuclei in Complex Forelimb Movement	Canyon Crest Academy	Haas

Senior Division – Behavioral and Social Sciences

105	Bahena Hernandez	Laritza	9	In School vs Out of School Therapy	Gompers Preparatory Academy	Ulyott
106	Belbese	Ahmed	11	Training Makes Perfect	Charter School of San Diego	Nasereiddin
107	Cai	Sean	10	Analyzing Stratified Ethical Behavior at Executive Levels with Firm-Corruption Shareholder Models	Scripps Ranch High	Gillum
108	Chung	Claire	10	Analyzing Correlative Evidence Between Social Media Use and Depressive Symptoms	Rancho Bernardo High	Hotz
109	Dela Rosa Flores	Patrick Raffiele	9 9	The Effect of Regular Mode versus Night Mode on iPhone User's Sleep During School Days	Sweetwater Union High	Sandoval
110	Gutierrez	Andrea	9	Filter or No Filter	Vincent Memorial Catholic High	Turner
111	Jimenez	Cesar	9	Concussions and Memory	Eastlake High	Bayley
112	Orozco Reyna Montoya	Savanah Alex	10 10	Typed vs Handwritten Notes	Central Union High	Rueda
113	Patil	Pranav	11	Determining the Effectiveness of Video Games in Cybersecurity Education	Del Norte High	Liao
114	Stallworth	Kayla	10	The Effect of Music on Human Reaction Time	Central Union High	Rueda
115	Young	Caneel	11	Is <i>Lactobacillus Rhamnosus</i> the Solution to Anxiety Relief?	Canyon Crest Academy	Haas

Senior Division – Biochemistry

118	Del Olmo	Sarah	12	Does a Peeled Apple a Day Keep the Doctor Away?	Bonita Vista High School	Mardahl-Dumesnil
119	Gan	Jessie	10	Using Bioinformatics Tools to Identify Epitopes in MMP-15, a Potential Lung Cancer Drug Target	San Diego Jewish Academy	Eisen

65th Annual Greater San Diego Science & Engineering Fair - 2019

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Biochemistry (cont'd)						
120	Montano	Luz	10	Brightness of Luminol	Central Union High	Rueda
121	Verdolin	Michael	11	Pyogenic Urine May Affect Accuracy of LCMS Urine Drug Testing	Eastlake High	Bayley
122	Vu	Elise	10	Gene Expression and Repression in Embryonic Stem Cells and Neural Progenitor Cells	Canyon Crest Academy	Haas
123	Wong	Elleanor	12	Investigation of Hydrolytic Enzymes Present in Commercial Probiotics Using Starch and Lactose	Bonita Vista High	Mardahl-Dumesnil
124	Yang	Joyce	11	Effect of shRNA on GnRH-R Synthesis	Canyon Crest Academy	Haas
125	Yao	Derrick	11	Machine Learning Based Primer Design for Recombinase Polymerase Amplification	Canyon Crest Academy	Haas
126	Zhang	Paul	10	Computational Discovery of Novel PIEZO2 Inhibitors to Potentially Treat Tactile Allodynia	Canyon Crest Academy	Haas

Senior Division – Chemistry

129	Chaudhuri	Anushree	11	A Porous Silicon Optical Nanosensor for Toxic Organic Vapors	Westview High	Loo
130	Madayag	Tyler	8	Boost: How Does It Work?	St. Francis of Assisi	Fantano
131	Murray	Will	11	Understanding Ratiometric Imaging of Porous Silicon (pSi) Nanoparticles for Functional Imaging and Selective Sensing Applications	Francis Parker School	Ziegler

Senior Division - Computer Science

133	Chowdhuri	Sauhaarda	11	PhonoNet: Deep Learning For Raga Identification In Indian Classical Music	Westview High	David
134	Elarabawy	Adham	11	Predicting Optimal Farming Regions via Machine Learning Trained on Novel Vegetation Index	Canyon Crest Academy	Haas
135	Fan Hsieh	Leonard Jonathan	11 11	Predicting Blood Glucose Level In Type 1 Diabetes Patients Using Recurrent Neural Networks	Canyon Crest Academy	Haas
136	Fowler	Lou	9	The Red Schoolhouse: A Tool For Assessing Environmental Risk In SDUSD Schools	Academy of Our Lady of Peace	Wiedower
137	Granja Yang	Tatiana Macey	10 10	Food Fetch	San Pasqual High	Duran

65th Annual Greater San Diego Science & Engineering Fair - 2019

Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division - Computer Science						
138	Levine	Alex	12	Efficiently Identifying High-Centrality Actors in Modular Networks	La Jolla High	Eaton
139	Liu	Daniel	11	Extending Adversarial Attacks and Defenses to Deep 3D Point Cloud Classifiers	Torrey Pines High	Newman
140	Lu	Junyi	11	Air and Quality Detector	Canyon Crest Academy	Haas
141	Park	Seonggeun	11	Physics Phun: The Gamification of Physics Education through a Mobile App	Olympian High	Claudio
142	Rao	Adithya	11	Android AiSL : American Sign Language (ASL) Fingerspelling to Speech Translator Using Artificial Intelligence on Android	Canyon Crest Academy	Haas
143	Soliman	Ziyad	9	Pass Your Bill: Understanding Legislation Using Machine Learning	Mount Everest Academy	Nasereiddin
144	Sumpena	Edmund	9	aTrack: Cost-Effective Asset Tracking Based on Cooperative Crowdsourced Mobile Sensors	Westview High	Halander
145	Wu	Dustin	11	Convolutional Neural Network Ensemble For Histopathologic Cancer Metastasis Detection	Pacific Ridge High	Mudaliar
146	Yaramada	Sahithy	11	Detecting Abnormal RBCs with Computer Vision	Canyon Crest Academy	Haas
147	Zhuang	Hsiang-Kuang	9	The Most Effective Characteristics of a Secure Password	Mount Everest Academy	Apazidis

Senior Division – Engineering: Electrical and Mechanical

150	Amanullah	Yusuf	10	An Advanced Bicycle Safety System to Prevent Rider Injuries	Mt. Everest Academy	Negus
151	Bodenhamer	Tyler	9	Engineering a 3D Printer Built with Recycled Computer Parts	Serra High	Gonia
152	Cantwell Plancarte	Amanda Victor	12 12	Sensing Your Concentration	Central Union High	Rueda
153	Dehaini	Hamza	10	Reducing the Amount of Wildfires Caused by Power Line Snapping	Scripps Ranch High	Nasereiddin
154	Duong	Han	9	Power of Turbines	Eastlake High	Bayley
155	Kuo	Marc	9	Visual Field Mapping By Embedded LED Array	La Jolla High	Kuo
156	Peluso	Brent	12	Electrothermally Cooling a Pitcher's Arm	Canyon Crest Academy	Haas
157	Reddy	Rakesh	11	Affordable Off-site 3D-printable Below-the-Knee (BKA) Prosthesis	Francis Parker High	Ziegler

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Senior Division – Engineering: Energy and Transport

159	Lew	Ken	11	Graphene Composite Material and Heatsink Application in Fire Resistant Drone Design	La Jolla Country Day School	Padgett
160	Schremmer	Zachary	11	Stirling Engine Combined Heat and Power Systems	University City High	Quessenberry

Senior Division – Engineering: Materials and Bioengineering

161	Beg Sun	Harris	11	A Novel Approach to Dermatology via Neural Networks	Canyon Crest Academy	Haas
		William	12			
162	Caligiuri	Christopher	10	BrainBot: Integrated Robotics Platform for Modeling and Interacting with Cortical Organoids	Canyon Crest Academy	Haas
163	Catanzaro Catanzaro	Francisco	10	Measuring Chlorophyll Fluorescence and Spectral Reflectance for the Remote Sensing of Agriculture	Cathedral Catholic High	Milani
		Isabella	12			
164	Dehaini	Dina	12	Synthesizing a Bispecific Antibody for Alzheimer's disease	Scripps Ranch High	Nasereiddin
165	Gurram Wu	Sumanth	12	Electromagnetic Fields Inhibit Cancer Proliferation: An Interdisciplinary Approach to Improve Treatment	Westview High	Halander
		David	12			
166	Huang Huang	Ryan	9	A Microbiome - AI Sensor for Detection of UV Risk	Canyon Crest Academy	Haas
		Tristan	11			
167	Kuo	James	10	Semi-permeable Membrane to Minimize Traffic Disruptions When Re-painting Roads	La Jolla High	Kuo
168	Palayur	Ann	11	Computerized Muscle Control for Paralyzed Patients Using Non-Toxic Batteries	Saint Joseph Academy	Kerekes
169	Pollner	Alina	11	Super-Mendelian Inheritance Mediated by CRISPR-Cas9: Bioengineering Plant Genomes to Increase Crop Production	Canyon Crest Academy	Haas
170	Rabe Rosales	Heidi	12	Improvising Instruments	Central Union High	Rueda
		Ricardo	12			
171	Randhawa	Waleed	9	A Digital Dual-Hormone Artificial Pancreas: A Year Two Study	Scripps Ranch High	Gillum
172	Reeb	Remy	11	Reducing the Incidence of Falls Among the Elderly	Cathedral Catholic High	Lopatka
173	Tianshi	Emily	10	Biomimicking Torrey Pine Needles: Atmospheric Moisture Harvesting Through Alternating Hydrophilic/Hydrophobic Micro-Patterns	The Cambridge School HS	Mayne

Senior Division – Environmental Sciences and Management

176	Decilap	Ambre	12	The Effect of Nitrate Runoff on Microbial Fuel Cells	Bonita Vista High	Mardahl-Dumesnil
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Senior Division – Environmental Sciences and Management (cont'd)						
177	Nafarrete	Noah	11	The Impact of Plants on Soil Erosion and Turbidity	Bonita Vista High	Mardahl-Dumesnil
178	Sung	Anthony	9	Go Green Roofs	The Cambridge School HS	Mayne
179	Tucker	Timothy	11	Vehicle Emissions and Tropospheric Ozone	Bonita Vista High	Mardahl-Dumesnil
180	Vargas Vargas	Alfred Audrey	12 10	Photocatalytic Treatment of Wastewater and Generation of Electricity Through Hydrogen Fuel Cell Technology	Sweetwater Union High	Sandoval

Senior Division – Mathematical Sciences

182	Faktor	Benjamin	10	Solution Of Lotka-Volterra Equations For Novel Analysis	Canyon Crest Academy	Haas
183	Madhukara	Rachana	11	Error Term Analysis for Weighted Character Sums	Canyon Crest Academy	Haas
184	Shimabukuro	Benjamin	10	Coin Flip Fairness	Mt. Everest Academy	Tran

Senior Division – Medicine and Health Sciences

186	Abdurrahman	Hasan	9	Viability of Smartphone Hearing Test Applications for Early Hearing Loss Detection	Mt. Everest Academy	Apazidis
187	Agashe	Ruchi	11	Identification of Treatments for Hemophilic Joint Disease through Evaluation of Vascular Defects via Optimization of Imaging Techniques	Canyon Crest Academy	Haas
188	Cibrian Tanori	Alecsander Efrain	10 10	Pizza Grease	Central Union High	Rueda
189	De La Rosa Negrete	Alexis Alexis	12 11	Sensory Screening Test For Dementia	Central Union High	Rueda
190	Dogra	Arushi	11	Effects of Novel Dual PI3K-BRD4 Inhibitor SF2523 on Mantle Cell Lymphoma Survivorship	Del Norte High	Smedley
191	Gandarilla Nogueira	Sofia Tamara	11 11	Bye Bye Bacteria	Eastlake High	Bayley
192	Hammad	Tasneem	9	The Effect of Natural Remedies and Nanoparticles on Cells	Bright Horizon Academy	Nasereiddin
193	Kim	Elliott	10	Metastats: A Prediction Program/Matrix for the Metastatic Development of Melanoma Cancer	Scripps Ranch High	Gillum
194	Lara	Mary Jasmine	12	PHLPP's Protective Properties: Nicotine's Attenuation on Drug Therapies Targeting Cardiac Arrest	Olympian High	Claudio

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Medicine and Health Sciences						
195	Lee	Ji Hyun	12	Creating a Three Dimensional Airway Cell Culture to Study Asthma	Canyon Crest Academy	Haas
196	Liu	Andrea	12	The Role of G-CSF-R in Medulloblastoma Cancer Stem Cells and Pathogenesis	Canyon Crest Academy	Haas
197	Mandyam	Atulya	9	Cell-death by Methamphetamine is related to increased activation of Caveolin-1 and Kinases	Westview High	Christopher
198	Matute	Nachelle	12	The Effects of Music on the Heart	Bonita Vista High	Mardahl-Dumensil
199	Piccioni	Sofia	11	Novel Method Using CRISPR CAS9 to Change K562 Cells' Blood Type	Canyon Crest Academy	Haas
200	Randhawa	Omer	11	The Impact of the APOE gene on Alzheimer's Gender Discrepancy Genetics	Scripps Ranch High	Gillum
201	Suri	Umit	11	Risk Factors and Outcomes of Infants with Pneumothorax	Francis Parker School	Ziegler
202	Tahan	Alexander	10	Enhanced MAF Gene Expression as a Novel Strategy for Cancer Treatment	Canyon Crest Academy	Haas
203	Tang	Jason	10	USP7 Inhibitor as a Novel Therapeutic Treatment for Triple Negative Breast Cancer	Canyon Crest Academy	Haas
204	Wang	Kate	10	A Computational Approach for Modeling Nonsense Mutations in DMD	Canyon Crest Academy	Haas
205	Wang	Kaitlyn	11	shRNA-Mediation of UGGT1 to Modulate Excessive Procollagen Secretion in Cardiac Fibrosis	Canyon Crest Academy	Haas

Senior Division -- Microbiology

208	Chang	James	10	Creating a Strain of IFN-Producing Bacteria which Survives in Human Gut	Canyon Crest Academy	Haas
209	Kang	Emily	10	Turning Over A New Phage: A Novel Approach To Phage Therapy	Canyon Crest Academy	Haas
210	Mulvehill	Allison	11	The Effects of Sodium Benzoate on Micronuclei Occurrence in HEK293 Cells	Canyon Crest Academy	Haas
211	Murthy	Adhithi	9	Finding An Alternative to Antibiotics: Year 3	Del Norte High	Gillum
212	Rainey	Georgia	9	The Effect of Different Colored Lights on Dinoflagellate Luminescence	Mt. Everest Academy	Apazidis
213	Zhu	Wanyi	10	Role of dpy-13 in Osmotic Stress Resistance in Caenorhabditis Elegans Eggs	Canyon Crest Academy	Haas

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Senior Division – Physics and Astronomy						
215	Barrett	Brianna	10	The Effect of Weather on the Speed of a Softball	Central Union High	Rueda
216	Broudy	Isaac	11	Developing a Linear Polarimeter for Astrophysical Tests of Beyond Standard Model Physics	Bonita Vista High	Mardhal-Dumesnil
217	Holst	Mason	10	An Optimized Multigrid Algorithm for Enabling Efficient Physical Simulations on Realistic Geometries	Canyon Crest Academy	Haas
218	Vijayakumar	Vivek	10	Analysis of Molecular Spectra in AGB Carbon Stars	San Marcos High	Terrill
Senior Division – Plant Sciences						
220	Camacho	Karla	12	Effect of Microwave Radiation on <i>Raphanus sativus</i> and <i>Saccharomyces cerevisiae</i>	Central Union High	Rueda
221	He	David	10	Effect Of Genetic Modification Of DMR6 On <i>Solanum Lycopersicum</i>	Canyon Crest Academy	Haas
JUNIOR DIVISION						
Junior Division – Animal Sciences						
501	Adato	Nisso	8	Who Let the Dogs Out	Soille San Diego Hebrew Day School	Bessler
502	Dalessio	Jeni	7	Does One Color of Hummingbird Food Attract More Hummingbirds or Less?	Nazareth School	Reed
503	Dinh	Jason	7	Birds Sight and Colors	Oak Grove Middle	Gale
504	Dio	Katherine	8	Fish Frenzy	Carlton Hills	Ducharme
505	Jones	Isabel	7	Dogs Voice Preference	St. Didacus Parish School	Blickenstaff
506	Martin	Shane	7	What Does Fido Know? A Cognitive Study	St. Gregory the Great Catholic School	Ryan
507	Matsumoto	Soleil	7	The Very Hungry Caterpillar, I Mean Worm!	Santa Fe Christian School	Culley
508	Meroniuk	Kaden	8	Good Things Come to Those Who Bait: A Behavioral Study of Fish	Coastal Academy	Biernacki
509	Patel Samy	Neelan David	7 7	Effects of Infrared and Visible Light Wavelengths on <i>Planaria</i> Regeneration	The Rhoades School	Hunker

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Animal Sciences (cont'd)						
510	Prince	Kaia	7	Ants and Sugar	St. Didacus Parish School	Blickenstaff
511	Reynolds	Alyana	7	Worm Leachate vs. Water	St. Rita's School	Rice
512	Teran	Daniela	7	Ladybugs and Color	St. Didacus Parish School	Blickenstaff
Junior Division – Behavioral and Social Sciences						
517	Arredondo Brown	Emma Sarah	7 7	Learning Styles	St. Michael's School Poway	Poling
518	Assamene	Meron	7	Do Different Types of Music Affect the Heart Rate?	St. Didacus Parish School	Blickenstaff
519	Baes	Piper	7	Colorful Memories	St. Peter the Apostle School	Jones
520	Baldeaux	Katelyn	7	How Does Background Noise Affect Your Ability to Identify Food	St. Therese Academy	Peterson
521	Balubar	Jodeci	8	Phantom Limbs	Farb Middle	Huntington
522	Barraza-Corpus	Rico	8	Effects of Finger Activity on Dexterity	St. Didacus Parish School	Blickenstaff
523	Abejo	Jay	7	Why Do We Yawn?	St. Michael Academy	Okuley
524	Barton Burrows	Mele Noa	7 7	Misconstruing the Tone of a Written vs. Verbal Message	The Rhoades School	Hunker
525	Afra	Aviya	7	Investigating the Correlation Between Demographics and Attitudes Towards Contemporary Social Movements	The Rhoades School	Hunker
526	Bartsch	Andrew	8	Ice Ice Baby!	De Portola Middle	Bridges
527	Apostol	Korina	7	A Word's Meaning Interfering with the Ability to State a Word's Color	St. Michael Academy	Okuley
528	Bayot	Abigail	7	How Important is Letter Placement in Reading?	St. Rita's School San Diego	Rice
529	Arnold	Abigail	7	Is the Stroop Effect More Visible in Children or Adults?	Mount Helix Academy	Hudson
530	Bryant	Michelle	7	Children Value Something More If They Worked for It	Santa Fe Christian School 7-8	Culley
531	Clardy	Ashley	7	Advantages of Dyslexia!	Santa Fe Christian Schools 7-8	Culley
532	Cohen	Bertha	8	Blueberries - What They Can Do for You	Soille San Diego Hebrew Day School	Bessler

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Behavioral and Social Sciences (cont'd)						
533	Colello	Quinn	8	Which Sense Has the Fastest Reaction Time: Sight, Hearing, or Touch?	Coastal Academy	Biernacki
534	Copeland Houk	Kylie Alexandra	8 8	The Effects of Auditory Cues on Recall of Visual Materials	The Rhoades School	Hunker
535	Dalton	Mariana	8	The Ranschburg Effect: Myth or Fact?	St. John of the Cross	Krumm
536	De Las Alas	Jeremy	7	Does the Awareness of a Negative Consequence Affect the Way You Work?	St. Michael Academy	Okuley
537	Demarchi	Bianca	8	Does Social Media Affect Self-Confidence in Teenagers?	St. Therese Academy	Peterson
538	Deneen	Kendal	8	Oh Happy Day	St. John School - Encinitas	Heins
539	Dondisch	Giulianna	8	Which Age Is Most Likely To Cheat?	San Diego Jewish Academy	Deveau
540	Elasaad Ryan	Leila Leila	7 7	Attention vs Retention: Effects of Notetaking on Short and Long Term Memory	The Rhoades School	Hunker
541	Fradkin	Avraham	7	Does Grade Level Affect the Stroop Effect?	Chabad Hebrew Academy	Gonzales
542	Frigerio	Lora	8	Does Color Affect Memory	St. Rita's School	Rice
543	Goncalves	Sophia	7	All About That Bass	St. John School-Encinitas	Heins
544	Gonzalez Jimenez	Anais Valentina	8 8	Audio Illusions	Our Lady of Mount Carmel	Gomez
545	Goodwin	Karis	7	Stop Copying Me	St. John School-Encinitas	Heins
546	Gutierrez	Mia	7	Can You Feel It?	St. Mary's - El Centro	Teran
547	Gutman	Ella	8	Eye Color Effect on Eye Sight	San Diego Jewish Academy	Deveau
548	Halenza Palmer	Carter Luke	7 7	You've Got the Beat!	The Rhoades School	Hunker
549	Hayek	Quinn	8	Measuring Multitasking	St. Peter the Apostle School	Jones
550	Hecht	Sydney	8	Testing the Impact of Gender on a Variation of the Prisoner's Dilemma	The Rhoades School	Hunker
551	Inocentes	Alecsandra	7	How Does What You See Affect What You Hear?	St. Michael Academy	Okuley
552	Kaplan	Elianna	8	Feel the Flavor	Soille San Diego Hebrew Day School	Bessler

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Behavioral and Social Sciences (cont'd)						
553	Kareem	Rozita	7	Need Help Focusing?	Bright Horizon Academy	Nasereiddin
554	Katz	Jesse	8	How Does Stress Affect Our Everyday Life?	San Diego Jewish Academy	Deveau
555	Kavanaugh	Colin	7	Outdoors or Indoors - Which is Best for Taking a Test	All Hallows Academy	Humkey
556	Klein	Brenan	8	If You Know Hebrew, Can You Read Backwards Easier?	San Diego Jewish Academy	Deveau
557	Kyne	Silas	7	To Color or Not to Color - That is My Question	St. Joseph Academy	Rice
558	Lay	Kyla	7	Balance It Out	St. Didacus Parish School	Blickenstaff
559	Little	Alexandra	8	Investigating Eyewitnesses	St. Peter the Apostle School	Jones
560	Lopez Portillo Nelson	Isabella Ella	8 8	Does Living a Healthier Lifestyle Lead to Better Memory?	Our Lady of Guadalupe Academy	Patton
561	Mannor	Rebecca	8	How Exercise Affects Reaction Time	San Diego Jewish Academy	Deveau
562	Marley	Katie Grace	7	Battle of the Brands	St. Peter the Apostle School	Jones
563	Martino	Tyler	7	How Does Technology Affect Reaction Time?	St. Michael Academy	Okuley
564	McKeeman	David	7	Amygdala Reactions	Coastal Academy	Biernacki
565	Mechling	Alyssa	7	How Does Music Affect Memory in the Elderly?	Nazareth School	Reed
566	Montiel	Ashley	7	How Do Adults and Children React to When Other Children are Autistic	St. Michael Academy	Okuley
567	Morales Tinoco	Vanesa Breanna	8 8	Controller Coordination	St. Peter the Apostle School	Jones
568	Nasry Scott	Monica Ireland	8 8	Feeling Test Failure	St. Peter the Apostle School	Jones
569	Nesbitt Telfer	Wesley Trey	7 7	Documenting Reactions to Voice Confrontation	The Rhoades School	Hunker
570	Nguyen	Daphne	8	Can People Taste the Difference Between Yeasts?	Farb Middle	Huntington
571	Noce	Sofia	8	Can Humans Echolocate to Find the Mass of an Object?	St. John of the Cross	Krumm
572	Oden	Kaitlyn	8	Do You See What I See? - Eyewitness Accuracy	De Portola Middle	Yepiz
573	Panontongan	Jorielle	7	Does Running Help Your Memory	St. Michael Academy	Okuley

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Junior Division – Behavioral and Social Sciences (cont'd)						
574	Parisette	Olivia	8	The Effect of Activity on Time Perception	City Tree Christian School	Lee
575	Pascua	Jazmine Marie	8	How is Comprehension Affected by Reading from Paper Versus an Electronic Device?	St. Michael Academy	Okuley
576	Paumgardhen	Martina	8	Photograph: The Benefit of Instant and Powerful Communication	Farb Middle	Huntington
577	Persichilli	Emma	7	Effect of Packaging on Food Preference	St. Didacus Parish School	Blickenstaff
578	Pham	Amelia	7	Do Sensory Materials Help Children Learn Letters?	Nazareth Catholic School	Reed
579	Pham	Shaun	8	Reaction Time	St. Didacus Parish School	Blickenstaff
580	Philo	Lily	7	How Does Chewing Gum Affect Test Scores?	St. Michael's School Poway	Poling
581	Pupko Ginsberg	Eduardo	8	All for One, or One for All?	San Diego Jewish Academy	Deveau
582	Quezada	Adriana	7	The Science of Stuttering	St. John School - Encinitas	Heins
583	Roberts	Maura	7	Peppermint: Taste vs. Smell: Which One Affects Multiplication Test Scores the Most?	St. Michael's School Poway	Poling
584	Ross	Annabella	8	The Name Game	St. Peter the Apostle School	Jones
585	Sanchez	Sofia	7	Hands-Free Reaction Time	Bonita Vista Middle	Abundes
586	Sandoval	Daniela	7	How Does Clothing Affect the Perspective Others Have of You?	Corfman School	Leon
587	Savant	Ainsley	8	Vigor and Verts!	St. John School-Encinitas	Heins
588	Schultz	Julia	8	Does Priming Work?	San Diego Jewish Academy	Deveau
589	Stambaugh	Eden	7	Developing Empathy	Santa Fe Christian School 7-8	Culley
590	Tabalon	Jacob	7	How Do Others Affect Our Own Opinion	St. Michael Academy	Okuley
591	Territo Thomas	Sofia Shilo	7 7	Group vs Individual	St. Michael's School Poway	Poling
592	Thaper Weston	Mehar Jamie Jane	7 7	Effects of Transient Emotions on Short Term Memory	The Rhoades School	Hunker
593	Thomas	Aaliyah	7	Teamwork with Friends vs Strangers	St. Michael Academy	Okuley
594	Ty	Jonathan	8	Multitasking in a School Environment - Good or Bad?	National City Middle	Jones

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Junior Division – Behavioral and Social Sciences (cont'd)						
595	Vidal Jacobo	Estrella	8	Does Having Different Passwords for Different Accounts Matter?	Farb Middle	Huntington
596	Weiss	Sammi	8	How Music Affects Memory	San Diego Jewish Academy	Deveau
597	Wellman	Alexandra	8	How Do We Process Reading the Best?	San Diego Jewish Academy	Deveau
598	Woodford	Andy	8	The Effects of Social Media on Teenager's Mental Health	Rancho del Rey Middle	Castillo
599	Krauss	Zachary	7	The Effect of Gaming on Typing Speed	Mt. Helix Academy	Hudson
Junior Division – Biochemistry						
603	Benitez	Nora	7	What Type of Water Has the Least Bacteria?	St. Therese Academy	Peterson
604	Clark	Mia	8	Solving the Mysteries of Food Dye with Gel Electrophoresis	De Portola Middle	Yepiz
605	Diaz	Azul	8	Save and Protect: Testing the Effectiveness of Biodegradable Packaging	Chula Vista Middle	Saclauso-Caro
606	Elmi	Mumtaaz	8	Can Herbicides & Pesticides Have an Effect on a Planaria Nervous System?	Bright Horizon Academy	Nasereiddin
607	Espinoza	Roxanna	8	Effects of Preservatives on Bread Molding Times	Chula Vista Middle	Saclauso-Caro
608	Gagiolo	Ty	7	Going Bananas!	St. Didacus Parish School	Blickenstaff
609	Halili	Mia Ann	7	pH and Biogas Production	St. Michael's School - Poway	Poling
610	Katriel Nagarajan	Levi Krishna	7 7	From Caged to Free Range: Comparing Nutritional Profiles in Hens' Eggs	The Rhoades School	Hunker
611	Leshner	Ryan	8	Sugar & Starch: How Do Carbohydrates in Junk Food Affect Teenagers?	Grant Middle	Baldwin
612	Mahoney	Lily	8	What Milk Rots the Quickest?	St. John School- Encinitas	Heins
613	Marshburn	Timothy	8	Tricking the Brain Into "Smelling" Differently	Coastal Academy	Biernacki
614	Obispo	Zachary	8	Which Fruit Has the Most Vitamin C?	St. Michael Academy	Okuley
615	Otero	Kai-Jia	7	Five Second Rule: True or False?	Coastal Academy	Biernacki
616	Peng	Meixi	8	How Does Different Cooking Techniques Affect The Glucose Level of The Corn?	Wangenheim Middle	Mendibles
617	Pham	Jessica	8	How Does the Concentration of Sugar Solution Affect Flower Preservation?	Wangenheim Middle	Mendibles

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Junior Division – Biochemistry (cont'd)						
618	Roddy	Sydney	8	Candy vs Temperature	Farb Middle	Huntington
619	Ross	Bo	8	Bubbliest Kombucha	St. Mary Star of the Sea School	Alonso
620	Scelfo	Claire	7	Orange You Glad There Is Vitamin C?	St. Gregory the Great Catholic School	Ryan
621	Shakhman	Sari	8	When Is It Time to Get a New Towel?	Soille San Diego Hebrew Day School	Bessler
622	Walrath	Claire	7	Sauerkraut: Which Method of Fermentation is the Most Efficient?	Nazareth School	Reed
623	Wilson	Henry	7	The Best Food Battery	St. Didacus Parish School	Blickenstaff

Junior Division – Chemistry

626	Abdi	Yasmin	7	Cook and Reuse	Bright Horizon Academy	Nasereiddin
627	Barrett	Brooke	8	The Effect on Fabric Type on Burning Rate	City Tree Christian School	Lee
628	Biese	Therese	8	Chemiluminescence in Forensic Science	St. Joseph Academy	Rice
629	Bridge	Anna	8	Paint and Temperature	Farb Middle	Huntington
630	Camposeco	Rosalina	8	The Effects of Different Strengths of Antacids on Lemon Juice	Wangenheim Middle	Mendibles
631	Cardenas	Marina	7	Sponge Absorption	St. Therese Academy	Peterson
632	Charles Ducharme	Trevor Connor	8 8	The Leaning Tower of Ice	Carlton Hills	Ducharme
633	Dhamim	Noorah	8	A Bio Friendly Oil Spill Remover	Bright Horizon Academy	Nasereiddin
634	Downing	Iliana	7	What Makes "Slime" Last Longer?	St. John School-Encinitas	Heins
635	Fimbres	Rossana	7	Purple Cabbage pH Indicator	St. Mary's School - El Centro	Teran
636	Finley	Jade	8	Testing Contaminant Levels in Water	National City Middle	Jones
637	Guzman	Breann	8	What Type of Oil Separates from Water the Fastest?	Farb Middle	Huntington
638	Hernandez	Gael	8	The Effect of Temperature on the Rate of Rust Formation on Iron	St. Michael Academy	Okuley
639	Juarez	Sarah	8	How Much Salt is Needed in Water for an Object to Float?	Chula Vista Middle	Tom

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Junior Division – Chemistry (cont'd)						
640	Lai	Malvyn	8	Catalyst Efficiency for Producing Energy Fuels by Water Splitting	Mt. Everest Academy	Tran
641	Le	Theresa	8	Acid Rain	Farb Middle	Huntington
642	Mascarina	Eryn	8	The Effect of Spf Level on Time	Wangenheim Middle	Mendibles
643	Mozaffari	Sholeh	7	Same Chemical Process, Different Types of Hair	All Hallows Academy	Humkey
644	Shen	Christina	8	Flour Power	St. Didacus Parish School	Blickenstaff
645	Singer	Catherine	7	Does Coke, Water, or Milk Rot Your Teeth the Quickest?	Mount Helix Academy	Hudson
646	Staley	Justine	8	Effects of Growing Alum Crystals Under Various Light Colors	Wangenheim Middle	Mendibles
647	Stys	Summerlyn	7	Sugar and a Drink: How Hot Can It Get	All Hallows Academy	Humkey
648	Willett	Adelina	7	Candle Burn Times	St. Therese Academy	Peterson
649	Winicki	Anthony	8	Which Food Has More Energy?	St. Mary Star of the Sea School	Alonso
650	Zamora	Dafydd	8	Wood and Water Absorption	St. Didacus Parish School	Blickenstaff

Junior Division – Computer Science

655	Bamford Taylor	Tom Ashur	7 7	Constructing a Wildlife Recognition System Using a Raspberry Pi	The Rhoades School	Hunker
656	Bautista	Edvar	8	WIFI FAST and... WIFI CRASHED!	Chula Vista Middle	Saclauso-Caro
657	Correll Mallela	Cyrus Vihaan	8 8	Applying Neural Network Techniques to Compute Stellar Values	The Rhoades School	Hunker
658	Khan	Mohammad Ibrahim	8	Long-Range Text Reader	Bright Horizon Academy	Naserelddin
659	McKay Quinonez Munoz	Alejandro Daniel	8 8	Is There Really a Better Way to Win a Board Game?	Our Lady of Mount Carmel	Pereyra
660	Rosander	Patrick	8	Coding a Video Game	St. John School - Encinitas	Heins

Junior Division – Earth and Planetary Science

664	Atis Jayco	Owen Robin	7 7	Seeing Particles Through a Cloud Chamber	St. Rita's School	Rice
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Junior Division – Earth and Planetary Science (cont'd)						
665	Bantval	Pranav	8	Impact of Rainfall and Sea Level on Flood Related Loss in San Diego	Carmel Valley Middle	Fredin
667	Carbajal Ruiz	Karol Ana	7 7	Flower Color Changing	Our Lady of Mount Carmel	Pereyra
668	Estevez	Eli	8	Oxygen: How Much Is In Your Air?	St. Pius X School	Doyle
669	Freaner	Maria Fernanda	8	The Effect of Betta Fish Fertilizer on Plant Growth	City Tree Christian School	Lee
670	Leyva	Aidan	8	What Ground is Best for Cast Fossilization	Corfman School	Claverie
671	Lindgren	Emily	8	Porosity of Soil	St. Didacus Parish School	Blickenstaff
672	Lyons	Amanda	7	Rooting Around Erosion	St. Michael's School - Poway	Poling
673	Magat	Xavier	8	Dispersion of Oil	St. Rita's School	Rice
674	Manriquez	Madeline	7	What Materials Last Longer in Wave Erosion?	Nazareth School	Reed
675	Murray	Erin	7	Which Beach Has More Toxic Phytoplankton?	Classical Academy Middle	Giesing
676	Tran	Steven	8	Erosion Reduction	Wangenheim Middle	Mendibles

Junior Division – Engineering: Electrical and Mechanical

680	Abdelaal	Adam	8	Helping Eye for the Blind	Bright Horizon Academy	Naserelddin
681	Aldrete	Carlos	8	First Down Accuracy Laser	Rancho del Rey Middle	Walker
682	Allen Coates	Alexis Dayna	7 7	Flame vs. Sound	Rancho del Rey Middle	Tu
683	Alwazir	Solaiman	8	Drone Disaster, First Responder	Bright Horizon Academy	Naserelddin
684	Alwazir	Ayat	8	HealthBand	Bright Horizon Academy	Naserelddin
685	Bagnas Waters	Bryan Ryan	8 8	Oxygen Concentrator	Marston Middle	Holland
686	Bane	Timothy	7	Power Through Wind	Good Shepherd Catholic School	McNeil
687	Bhatkar	Ayaan	8	Minimizing Earthquake Damage for Buildings	Bright Horizon Academy	Naserelddin
688	Blaylock Feiner	Jack Dan	7 7	Item Carrier for Drones	St. Michael's School - Poway	Poling

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Engineering: Electrical and Mechanical (cont'd)						
689	Bocalan	Donovin	8	Static Panic	St. Pius X School	Doyle
690	Bradley	Eamon	7	What Material for Drumsticks Produces the Highest Decibel Level?	Nazareth School	Reed
691	Catanzaro	Marcus	7	Rock and Roll Derailment: Reducing Harmonic Oscillation in Trains	Pacific Beach Middle	Hollis
692	Chatha Chatha	Anusha Arjun	7 7	Obstacle Avoiding Robot: A Reinforcement Learning Approach	The Rhoades School	Hunker
693	Chesney Eiguren	Ethan Alexander	8 8	The Battle of the Motors: Hydraulic vs. Electric	St. John School - Encinitas	Heins
694	Colucci Putnam	John Paul Andrew	8 8	Solar Powered Phone Charger	St. John School - Encinitas	Heins
695	Criger	Samuel	7	Is It Possible to Cook a Potato with a Battery?	St. Mary Star of the Sea School	Alonso
696	Demegillo	Catherine	8	How Does the Type of Fingertip Effect the Grip Strength of the Mechanical Arm?	Wangenheim Middle	Mendibles
697	Espinosa	Michael	8	How Do Colored Filters Affect Solar Panel Energy?	Chula Vista Middle	Tom
698	Fonzo	Nick	8	Self-Driving Security Vehicle	St. John School - Encinitas	Heins
699	Gamiz	Alan	7	Which Structures Would Best Withstand an Earthquake?	All Hallows Academy	Humkey
700	Gonzalez	Luis	8	Binaural Microphones	Our Lady of Mount Carmel	Pereyra
701	Harper Nickel	Annika Bailee	8 8	The R.S.R.S (Rapid Space Retrieval System)	Marston Middle	Holland
702	Horbul	Kiryl	8	Zzzzzz...	Coastal Academy	Biernacki
703	Kantala	James Nathan	8	Build the Wall!	Wangenheim Middle	Mendibles
704	Konja	Gabriel	7	Batter Up	Nazareth School	Reed
705	Lawrenz	Lilli	7	Temperature: Do Windmills Care?	St. Gregory the Great School	Ryan
706	Lopez	Mayela	7	The MiP Robot and Obstacle Sizes	St. Didacus Parish School	Blickenstaff
707	McKinney	Nathan	7	Manipulating Magnetic Forces in an Electric Motor	Good Shepherd Catholic School	McNeil
708	McWilliams	Jessica	8	Crash Avoidance System	Thurgood Marshall Middle	Schumacher
709	Menon	Lakshmi	8	Developing a Multimodal Robotic Scoop	The Rhoades School	Hunker

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Engineering: Electrical and Mechanical (cont'd)						
710	Mulvihill	Matthew	7	Mechanical Hand	Corfman School	Leon
711	Nguyen Nguyen	Emily Catherine	8 8	A-"Wave" from Global Warming	Good Shepherd Catholic School	McNeil
712	Pampo	Aiden	8	The Effectiveness of Seawalls Against Waves	Wangenheim Middle School	Mendibles
713	Peterson	Drew	8	The Road Safe: A Box to Lock Up Your Phone While Driving	Coastal Academy	Biernacki
714	Rao	Rahul	7	Mobile Obstacle Detector & Warning System for the Visually Impaired	Pacific Trails Middle	Thacker
715	Renda	Nina	8	Cell Phone Radiation on Apple Phones	St. Didacus Parish School	Blickenstaff
716	Renteria Velarde	Claudia Ana	8 8	Solar Power vs Air Power	Our Lady of Mount Carmel	Pereyra
717	Rizo	Ria	7	How Specific Wing and Tail Shape Combinations Affect Flight	Mt. Everest Academy	Tran
718	Roberts	Lauren	8	Does Hot or Cold Water Charge Phones Faster Using Thermoelectric Generator	St. Mary Star of the Sea School	Alonso
719	Sara	Francis	8	Acoustic vs. Electric Guitar	St. Rita's School	Rice
720	Schmidt Streitman	Caroline Scarlett	8 8	WAVE Goodbye to Fossil Fuels... It's Time to SEA Energy Differently!	The Rhoades School	Hunker
721	Serawit	Yacob	7	Batteries and Temperatures	St. Didacus Parish School	Blickenstaff
722	Sridharan	Agastya	7	A 3D Autostereoscopic Quasi-Static- Volumetric Display	Thurgood Marshall Middle	Schumacher
723	Stuhlmacher	Carter	8	Need a Lift?	Rancho del Rey Middle	Castillo
724	Suenaga- Stephens	Rion	8	How Does the Type of Metal Affect the Amount of Electricity Produced?	Wangenheim Middle	Mendibles
725	Wachowiak	Evan	7	A Study of Bike Helmet Effectiveness	Nazareth School	Reed
726	Zheng	David	8	The Efficiency of Winglets	National City Middle	Jones

Junior Division – Engineering: Energy and Transport

731	Aldrete Reichenberg	Emilia Sophia	8 8	Does the Altitude Affect How High a Volleyball Bounces	St. Therese Academy	Peterson
732	Alsheikh	Nathan	8	The Future of Transportation: Solar Cars	Rancho del Rey Middle	Walker
733	Arshad	Talha	8	Paper Airplane Wing Shape on Flight Duration	Rancho del Rey Middle	Osuna

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Engineering: Energy and Transport (cont'd)						
734	Baldovino	Joven	7	Parachute (Does Size Matter?)	Bonita Vista Middle	Shimasaki
735	Barajas Delgadillo	Eliam Sebastian	8 8	Solar Traffic Light	Our Lady of Mount Carmel	Pereyra
736	Blue	James	7	Quantifying Model Airplane RPM at Full and Half Throttle	The Rhoades School	Hunker
737	Cehade	Leila	8	Magnetic Levitation Train	St. John School - Encinitas	Heins
738	Cordaro Shaffer	Brendan Max	7 7	The Water Maker	St. John School - Encinitas	Heins
739	De Jauregui	Hannah	8	Nose Cones are a BLAST	Wangenheim Middle	Mendibles
740	Guizar	Eric	8	Need Power? Testing the Accuracy of DIY Phone Charger	Chula Vista Middle	Saclauso-Caro
741	Hubbard	Grace	8	Bakin', Microwavin', and Sun Shinin'	Good Shepherd Catholic School	McNeil
742	Kerr	Virginia	7	The Effect of Gel Filters on Solar Energy Production	Nazareth School	Reed
743	Kircher	Noah	7	How Does Color Affect Solar Energy?	Bonita Vista Middle	Cardenas
744	Navarro	Blake	7	A Real Energy Race: Battery Power vs. Solar Power	Barbara Worth Junior High	Zinn
745	Perez	Leonardo	7	What Makes A Plane Fly?	Our Lady of Mount Carmel	Pereyra
746	Razo Flores	Octavio	8	DIY Battery Charger vs DIY Potato Charger	Chula Vista Middle	Saclauso-Caro
747	Spaven	William	8	Altering Fin Shape, to Make a Rocket, Skyrocket	Wangenheim Middle	Mendibles
748	Stevenson	Hannah	7	Powering A Marine Vehicle Using Solar and Magnetohydrodynamics	Coastal Academy	Biernacki
749	Watson	Jacob	7	Train Transportation Levitating or Wheels	St. John School - Encinitas	Heins

Junior Division – Engineering: Materials and Bioengineering

754	Claypool Green	Jocelyn Maxwell	7 7	D.A.N.C. Drug Administering Nano Chip	Marston Middle	Holland
755	Colucci Humphrey	Max Evan	7 7	Undercover Cars	St. John School - Encinitas	Heins
756	Englund	Lilian	7	Biological Erosion Control	St. Mary Star of the Sea School	Alonso
757	Farrukh	Nahal	7	Rooftop Gardens, Are They Good?	Bright Horizon Academy	Nasereiddin

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Engineering: Materials and Bioengineering (cont'd)						
758	Goodsell	Kai	7	Measuring the Effects of Materials on Blocking WiFi Signals	The Rhoades School	Hunker
759	Grissom	Jack	7	Metals Hot vs. Cold	St. Gregory the Great Catholic School	Ryan
760	Harris	Parker	8	Protective Barrier For Classrooms	Coastal Academy	Biernacki
761	Honold Nelson	Viviana Mia	8 8	Acoustics	St. Mary's School	Teran
762	Jaber	Bruno	8	Water on Wood	St. Didacus Parish School	Blickenstaff
763	Millan	Mateo	7	What Material Blocks RF Radiation the Best?	Bonita Vista Middle	Cardenas
764	Montiel	Jorge	8	Organic Fiber Replacement Plastic	Our Lady of Mount Carmel	Pereyra
765	Nozaki	Tenka	8	Singing Glasses: The Relationship Between Liquid Density and the Resulting Notes	Wangenheim Middle	Mendibles
766	Pajimola	Jacob	8	Rock Solid	St. Didacus Parish School	Blickenstaff
767	Sunnanonta	Todd	8	The Use for Plastic Waste	Wangenheim Middle	Mendibles
768	Thai	Tyler	8	Does Temperature Affect Sound Volume?	Wangenheim Middle	Mendibles
769	Tirado	Victor	7	Strength of Concrete, Sand to Cement	Nazareth School	Reed
770	Ymaz	Cecilia	8	Desalinate-It-Yourself: Desalinating Ocean Water Using a DIY Filter	Chula Vista Middle	Saclauso-Caro

Junior Division – Environmental Sciences and Management

775	Abdulkadir	Adam	7	How Does Acid Rain and Lime Affect Plant Growth?	Bright Horizon Academy	Naserelddin
776	Alwazir	Issa	8	Filter That Water!	Bright Horizon Academy	Naserelddin
777	Arechiga Luna	Elizabeth Frida	8 8	Are People Affected by Radiation Pollution Inside Their Homes?	St. John of the Cross	Krumm
778	Aswad	Farah	7	Grow Algae, GROW!!	Bright Horizon Academy	Nasrelddin
779	Bever	Amelia	8	How Compostable is Your Paper?	De Portola Middle	Bridges
780	Boeh	Andy	8	Copper Removal from Water	St. Didacus Parish School	Blickenstaff
781	Carbine	Douglas "Jake"	8	A Possible Alternative to Plastic Bags	St. John School - Encinitas	Heins

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Environmental Sciences and Management (cont'd)						
782	Cervantes Entwhistle	Sophia Emily	7 7	Conservation Questions? We Have the Answer!	St. Michael's School Poway	Poling
783	Crimaldi	Melia	7	Cooling the Urban Heat Island Effect	Santa Fe Christian Schools	Culley
784	Cunningham	Arianna	8	Carbon Filtering (CO2)	Farb Middle School	Huntington
785	de Andrade	Julia	7	Which Surface is the Most Reflective?	All Hallows Academy	Humkey
786	Dumas	Aaron	7	HAO Absorbent!	Santa Fe Christian Schools	Culley
787	Finlay Hamson	Lily Jaxon	8 8	Analyzing Runoff Water Quality at a San Dieguito Lagoon Tributary	The Rhoades School	Hunker
788	Flores	Jheren	8	Using Multi-Frequency Acoustics to Improve Production in Oil and Gas Wells	St. Michael Academy San Diego	Okuley
789	Hamud	Marty	8	The Mighty Pizza Liner	St. John School - Encinitas	Heins
790	Holland Wheatley	Elise Emma	7 7	Acid Rain	St. Michael's School Poway	Poling
791	Keddy Ruiz	Charles	8	What is the pH Level of Drinking Water in Chula Vista?	Chula Vista Middle	Tom
792	Krummenacher	Stephen	8	The Effects of Electromagnetic Radiation on Cellular Health	St. John School - Encinitas	Heins
793	Link	Morgan	8	Innovative Aeration Device to Reduce Methane Production in Landfill Waste	The Rhoades School	Hunker
794	Malveda	Stephanie	8	Solar-Powered Desalination	St. Didacus Parish School	Blickenstaff
795	Mascorro	Jaden	8	The Effect of Tenebrionidae Larvae on the Rate of Styrofoam Consumption	Rancho del Rey Middle	Osuna
796	Nguyen	Cong	8	Soak Up the Grease	Wangenheim Middle School	Mendibles
797	Noriega	Samantha	8	What is the Affect of Different Contaminants on the Life of Zooplankton?	Chula Vista Middle	Tom
798	Perez	Emma	8	Whats Hiding On Your Sink	Chula Vista Middle	Saclauso-Caro
799	Peterson Williams	Kate Maya	8 8	Sifting Sand: Documenting Plastics Pollution at Moonlight Beach	The Rhoades School	Hunker
800	Podlich	Kaitlyn	7	Investigating Water Quality at Buena Vista Lagoon	The Rhoades School	Hunker
801	Rodriguez	Sofia	8	The Degradation Process: Composting; How Fast Do Different Compost Mixtures Decompose?	Coastal Academy	Biernacki
802	Ruppert	Joy	8	Effluent Effects: Examining Water Quality at Moonlight Beach	The Rhoades School	Hunker

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Junior Division – Environmental Sciences and Management (cont'd)

803	Tapia	Tiffany	8	Desalinating Saltwater	Chula Vista Middle	Tom
804	Tianshi	Kyle	7	Detecting Microscopic Particles in Drinking Water	The Cambridge School	Mayne
805	Trojanowski	Oliver	8	How Toxic is Our Stormwater Runoff?	St. John School - Encinitas	Heins
806	Usman	Haroon	7	Biodegradable Plastics	Bright Horizon Academy	Naserelddin
807	Vazquez	Joey	7	Going Green And Everyday Life: Eco-Friendly vs. Conventional Detergents	Wilson Jr. High	Shiffer
808	Worman	Caroline	8	The Effectiveness Of Eco-Friendly Filters On Escondido Creek Water Quality	The Rhoades School	Hunker
809	Torres	Alexandra	7	Edible Water Bottles	Corfman School	Leon

Junior Division – Mathematical Sciences

813	Dimenstein	Netanel	8	Artificial Intelligence: Sports Stats	Soille San Diego Hebrew Day School	Bessler
814	Lopez	Ayari	7	Mathematical Modeling	Santa Fe Christian Schools	Culley

Junior Division – Medicine and Health Sciences

818	Arya	Ayden	8	A Hard Pill to Swallow	Soille San Diego Hebrew Day School	Bessler
819	Banuelos Hernandez	Isabela Renata	8 8	Blood Coagulation	Our Lady of Mount Carmel	Pereyra
820	Belbese	Haya	8	The Road to the Cure of Alzheimer's	Bright Horizon Academy	Naserelddin
821	Broudy	Benjamin	8	Are You Sweating Out Your Money	Soille San Diego Hebrew Day School	Bessler
822	Bruce	Isabel	8	Tea Tree Oil vs Isopropyl Alcohol: Eliminating Microbes on Medical Devices	The Rhoades School	Hunker
823	Bundogji	Danna	8	Is Biotin the Answer? Planaria and Nervous Tissue Regeneration	Bright Horizon Academy	Naserelddin
824	Casta	Carlos	7	What Effect Does Fluid Have on Sprinting	St. Therese Academy	Peterson
825	Castellanos	Tanner	8	How Does Screen Time Effect Our Minds and Bodies?	St. John School - Encinitas	Heins
826	Daw	Arianne	8	How do Genetics Affect the Way People Respond to Drugs?	St. Rita's School San Diego	Rice

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Medicine and Health Sciences (cont'd)						
827	Do	Cameron	7	Tackling Concussions: Testing the	The Rhoades School	Hunker
	Do	Christopher	8	Effectiveness of Headgear to Reduce Displacement		
828	Ehsan Nieves Ellis	Victoria Roeszele	8	Assessing Responses to Music in Alzheimers and Dementia Patients	The Rhoades School	Hunker
829	Ellis	Lia	8	Gemcitabine Fights Cancer Cells	Soille San Diego Hebrew Day School	Bessler
830	Franco	Nevaeh	8	The Power Of Tums	Chula Vista Middle	Salcauso-Caro
831	Halac	Amanda	8	Are Fingerprints Inherited?	De Portola Middle	Bridges
832	Hogan Severinghaus	Kaden Alexander	8 8	A Burning Question: Quantifying Levels of Particulates from Fireplace Emissions	The Rhoades School	Hunker
833	Malone	Kyla	7	What a Pain	Carlton Hills Middle	Ducharme
834	Maudal	Ava	7	The Science of Fingerprints	St.John School - Encinitas	Heins
835	McCarthy	Susan	7	Which Drink Affects Teeth (represented by hard-boiled eggs) Most?	St. Therese Academy	Peterson
836	McComic	Sinclair	7	Not White! What a Fright!!	St. Gregory the Great Catholic School	Ryan
837	Meza	Mia	7	Are Your Eyes Playing Tricks On You?	Barbara Worth Junior High	Kappeler
838	Pallenciaoe	Anna	8	Which Beverage Erodes Tooth Enamel the Most?	St. Therese Academy	Peterson
839	Polanco	Cielo	8	Subscription to Infection; MD vs DDS	St. Rose of Lima	Urbiztondo
840	Prentice	Lorraine	7	Which Flour Has the Most Gluten	Nazareth School	Reed
841	Quezada	Isabelle	7	Are Fingerprint Patterns Inherited	St. Rita's School San Diego	Rice
842	Ramirez	Isabella	8	Soda's Effect on Bones	Chula Vista Middle	Tom
843	Rizo	Petunia	8	Brainwave Differences Based on Soundscapes of Nature and Urban Areas	Mount Everest Academy	Negus
844	Saade	Daniel	8	Can You See It Moving?	Soille San Diego Hebrew Day School	Bessler
845	Swearingen	Safiya	8	The Power of Nuts	Chula Vista Middle	Saclauso-Caro
846	Taitano	Parker	8	Does Double-Dipping Actually Spread Germs	St. Peter the Apostle School	Jones
847	Walker	Kate	7	How Does Different pH Environments in the Stomach Affect the Dissolving of Iron?	Nazareth School	Reed

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Junior Division – Medicine and Health Sciences (cont'd)

848	Wells	Hudson	7	Does a Helmet Really Protect a Football Player's Brain?	St. John School - Encinitas	Heins
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Junior Division – Microbiology

853	Adato	Ariel	8	Plants That Purify	Soille San Diego Hebrew Day School	Bessler
854	Al-Delaimy	Meryem	7	Effect of Antioxidants on Yeast Cells	Bright Horizon Academy	Naserelddin
855	Angulo	Matthew	7	Be Water Wise	Corfman School	Leon
856	Buechs Garcia	Eoin Shane	7 7	Bacteria Busters	St. John School - Encinitas	Heins
857	Cavaco	Kanoa	8	Will UVA Lights or the Boiling Method Eliminate More Bacteria?	Chula Vista Middle	Tom
858	Chamberlin	Nicole	7	Bacteria in a Home	St. Didacus Parish School	Blickenstaff
859	Darling	Abigail	8	Does the Dog or Human Mouth Have More Bacteria?	Mount Helix Academy	Hudson
860	De Guzman	Ryan	7	School Makes Me Sick: Which School Area Grows the Most Bacteria?	Good Shepherd Catholic School	McNeil
861	Dellacato	Casey	8	Preserving Food	St. Didacus Parish School	Blickenstaff
862	Denning	Camille	7	The Bacteria on a Kitchen Sponge	All Hallows Academy	Humkey
863	Fan	Kara	8	Nanoparticles Liquid Bandage	Mesa Verde Middle	Bird
864	Flores	John Matthew	8	The Comparison of Bacteria Presence on Phones and Computer Keyboards	Wangenheim Middle	Mendibles
865	Fries	Sam	7	Water Wellness	St. Didacus Parish School	Blickenstaff
866	Fung Thacker	Pascale Elizabeth	8 8	Investigating Antimicrobial Properties of Local Plant Species	The Rhoades School	Hunker
867	Gan	Kelly	8	Natural Antibiotic Effects of Honey, Garlic, Lemon, and Ginger against Escherichia Coli	San Diego Jewish Academy	Deveau
868	Garcia	Jasmin	8	Dirty Money: Pennies vs. Dimes	Chula Vista Middle	Saclauso-Caro
869	Gorzelski	Nathan	8	Mold Mayhem	De Portola Middle	Yepiz
870	Griffin	Lindsay	8	Boys vs. Girls: Who Has the Grossest Phone?	De Portola Middle	Bridges
871	Howard	Sophie	7	The Five Second Rule	St. John School - Encinitas	Heins
872	Ismail	Fatuma	7	The Effect of Nanoparticles on Living Organisms	Bright Horizon Academy	Naserelddin

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Microbiology (cont'd)						
873	Khan	Safwa	7	Essential Oils on Bacteria	Bright Horizon Academy	Nasereiddin
874	Kleinman	Matisyahu	8	Is it Okay to Dip the Chip?	Soille San Diego Hebrew Day School	Bessler
875	Lawson	Eva	7	How Moisturizing Is Your Moisturizer?	St. Gregory the Great Catholic School	Ryan
876	Lerner	Jordan	8	Spoiler Alert!	Soille San Diego Hebrew Day School	Bessler
877	Ligeralde	Racel	7	Bacteria Found in Most Touched Household Surfaces	Good Shepherd Catholic School	McNeil
878	Ma'ake	Stefini	7	UVB Light Kills Bacteria	St. Didacus Parish School	Blickenstaff
879	Madrigal	Gabriela	8	Bacteria in Beach Water	St. Didacus Parish School	Blickenstaff
880	Meram	Samantha	7	5-Second Rule	Corfman School	Leon
881	Moryosef	Naomi	8	Water, Water, Everywhere, nor Any Drop to Drink?	Soille San Diego Hebrew Day School	Bessler
882	Norvell Rupesh	Willa Bhadra	7 7	CRISPR Challenge: Modifying Bacterial Strains To Evaluate Resistance To Streptomycin	The Rhoades School	Hunker
883	Osman	Shukriya	8	Do Antioxidants Prevent Chemotherapy Cell Toxicity?	Bright Horizon Academy	Nasereiddin
884	Rodriguez	Joel	8	Can Aloe Vera Juice Save Your Berries from Molds?	St. John of the Cross	Krumm
885	Ross	Brayden	8	Ice-Down, Bacteria Up: Microbial Growth in Poultry During Different Thawing Methods	Carlton Hills Middle	Ducharme
886	Salazar	Emily	7	Bacterial Growth in Water Bottles	St. Gregory the Great Catholic School	Ryan
887	Shakhman	Ethan	8	Should You Bring Your Toothbrush Case on Your Next Trip?	Soille San Diego Hebrew Day School	Bessler
888	Soe	Priyanka	8	Comparing the Efficacy of Backcountry Water Treatment Methods	The Rhoades School	Hunker
889	Tuscano	Erin Grace	7	Testing the Effectiveness of Oral Disinfectants	St. Michael Academy San Diego	Okuley
890	Tyson	Mary	7	One Burger, Hold the Bacteria	All Hallows Academy	Humkey
891	Wrotslavsky	Savannah	8	Zapping Bacteria	Soille San Diego Hebrew Day School	Bessler
892	Ortega	Alyssa	7	Microorganisms in Our Environment	Corfman School	Leon

Junior Division – Physics and Astronomy

896	Barker	Aharon	8	Rocket Fins	Soille San Diego Hebrew Day School	Bessler
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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Physics and Astronomy						
897	Broudy	Reuben	8	Modelling Minimum Voltage to Acoustically Levitate Non-spherical Objects at Near-wavelength Dimensions	Soille San Diego Hebrew Day School	Bessler
898	Cintron-Senturia	Carlo	8	What Kind of Advantage Are You Given from Mechanical Advantage?	De Portola Middle	Bridges
899	Dullano	Isabella	8	Testing a Homemade Magnetometer	St. Michael Academy San Diego	Okuley
900	Figueroa-Valdez Manzo	Carlos Sebastian	8 8	How are Magnets Affected by Changes in Temperature?	Our Lady of Mount Carmel	Pereyra
901	Gonzales	Xavier	7	Bowling Balls vs Their Weight	Nazareth School	Reed
902	Greeny	Lauren	8	Physics of the Violin	Farb Middle	Huntington
903	Hernandez	Marcos	7	Dimples on a Golf Ball and Distance	St. Didacus Parish School	Blickenstaff
904	Miles	Keira	7	Bottle Rocket Blast Off!	St. Therese Academy	Peterson
905	Pabloff	Rodolfo	8	Retaining Heat: Using Insulation to Keep Water Warm	Coastal Academy	Biernacki
906	Pasternack	Eliad	8	Electromagnetism	Soille San Diego Hebrew Day School	Bessler
907	Ritchie	Audrey	8	How the Inflation Pressure of a Ball Affects How Far It Goes	De Portola Middle School	Yepiz
908	Rodriguez Delgado	Carlos	8	Paper Retaining Water	Eastlake Middle	Martinez
909	Silva	Dharla	8	Using a Digital Camera to Measure Skyglow	Our Lady of Mount Carmel	Pereyra
910	Tarle	Candace	7	The Force is Strong with...Softball	St. John School - Encinitas	Heins
911	Teran	Valeria	7	Objects In Motion	St. Didacus Parish School	Blickenstaff
912	Thompson	Bobby	8	The Effect of Device Type on Radio Frequency	City Tree Christian School	Lee
913	Weckmann	Jace	8	How Does the Skin Texture Quality of a Baseball Affect the Distance a Ball Travels?	Wangenheim Middle	Mendibles

Junior Division – Plant Sciences

918	Almada	Alejandro	8	Bio Ball	St. John of the Cross	Krumm
919	Becker	Blake	8	Soil Grown Versus Hydroponic Grown Plants	St. John School - Encinitas	Heins
920	Bomar	Joseph	7	Fertilizer Experiment	Mount Helix Academy	Hudson

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
Junior Division – Plant Sciences (cont'd)						
921	Chakamian	Kian	8	Predicting Implications of OQDS on San Diego County Olive Trees	The Rhoades School	Hunker
922	Chine Yang	Jack	8	Surveying Slope Survivors: Native Plants	The Rhoades School	Hunker
		Eric	8	Prevalent to Beach Bluffs		
923	Curtis Watson	Cole	8	Regular Agriculture vs. Aquaponics	St. John School - Encinitas	Heins
		Zachary	8			
924	Datiles	Czarina	8	How Effective is Lemongrass Oil in Killing Mosquito Larvae Compared to Citronella Oil?	St. Therese Academy	Peterson
925	Edmonds	Emma	7	The Effects of Tropisms on Root Orientation: A Multivariable Approach	The Cambridge School	Mayne
926	Esch Millikin	Adam	7	Lichen Diversity: An Environmental Indicator of Air Quality	The Rhoades School	Hunker
		Grace	7			
927	Garcia	Sivan Hendric	8	The Effect of Scarification Methods on the Germination Rate of Seeds	Wangenheim Middle School	Mendibles
928	Gerson	Dalia	8	How Glucose Affects Plants	San Diego Jewish Academy	Deveau
929	Hamel	Scarlett	8	Do Plants Grow Better in Structured Spring Water, Microwaved Tap Water, or Bottled Water?	Mount Helix Academy	Cohen
930	Jackson	Kelli	8	Coffee's New Purpose: Using Coffee to Increase Plant Growth	Coastal Academy	Biernacki
931	Lehmann Shaul	Isabel	7	Pine Cone Scales: Verifying Fibonacci Sequences in Nature	The Rhoades School	Hunker
		Abigail	7			
932	Lemus	Alyssa	8	Capillary Action	Barbara Worth Junior High	Calip
933	McGillis Mills	Gabby	7	What Type of Water is Best for Plants?	St. Michael's School Poway	Poling
		Emerson	7			
934	Moreno-Magoni	Camila	7	How Do Different Liquids Affect How a Plant Grows?	St. Therese Academy	Peterson
935	Newton	Wesley	7	Algae Under Light	St. Didacus Parish School	Blickenstaff
936	Ortiz	Andreina	7	The Best Mulch for Plants	St. Didacus Parish School	Blickenstaff
937	Potter	Claire	8	Acid Rain, Killing Our Crops	St. Didacus Parish School	Blickenstaff
938	Rincon-Castellanos Sanchez	Diego	8	Aquaponics	Our Lady of Mount Carmel	Pereyra
		Eduardo	8			
939	Saiki	Brandon	7	Keeping Your Dog and Lawn Happy and Healthy	St. Michael's School Poway	Poling
940	Savage	Isaac	8	Natural vs Artificial Fertilizer	St. Didacus Parish School	Blickenstaff

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Proj #	Last Name	First Name	Gr	Project Title	School	Tchr/Advr
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Junior Division – Plant Sciences (cont'd)

941	Shallan	Felicity	7	Is Worm Castings Tea Better Than Miracle Gro	Mount Helix Academy	Cohen
942	Thiss	Jessica	7	Which Vinegar Kills Grass Better: 5% or 20%	Mount Helix Academy	Hudson
943	Verdadero	Danelle	8	How Does Magnetism Affect the Direction a Plant Grows?	Wangenheim Middle	Mendibles
944	Walley	Christina	7	Amazing Aquaponics, A Pretty Sweet Project	Coastal Academy	Biernacki

Junior Division ONLY – Product Testing/Consumer Sciences

949	Ambrosius	Tatiana	7	Racing Suits: What Are They?	St. Therese Academy	Peterson
950	Baterina Lingham	Hanna Lilliana	7 7	Name Brand vs. Off Brand Snack Comparison	St. Michael's School Poway	Poling
951	Brenes	Natalie	8	What Material Makes the Best Insulator for Cold Liquids	St. Pius X School	Doyle
952	Cappiello Goswami	Griffin Sameer	7 7	DIY Pool Covers for Controlling Water Temperature and Evaporation	The Rhoades School	Hunker
953	Carvajal	Antonio	7	Yeasty Goodness	St. Pius X School	Doyle
954	Casillas Russell	Elise Elizabeth	8 8	Which Makeup Wipe Works the Best ?	Carlton Hills Middle	Ducharme
955	Diaz	Allyson	7	Testing Food Glucose Levels and Their Effects on Eggshells	St. Pius X School	Doyle
956	Estudillo	Adela	8	Which Sunscreen is Best?	St. Didacus Parish School	Blickenstaff
957	Fiegl	Anneliese	7	To Bag or Not to Bag (It's Your Choice)	St. Michael's School Poway	Poling
958	Finger	Sydney	7	Charged or Overcharged	Carlton Hills Middle	Ducharme
959	Flores	Elena	7	Makeup Testers	Corfman School	Leon
960	Gonzalez	Ady	8	Evaluating Electrolytes in Drinkable Fluids	Chula Vista Middle	Saclauso-Caro
961	Gonzalez Sierra	Sarai Romina	7 7	Trash Bag Breaking Point	Our Lady of Mount Carmel	Pereya
962	Guenniche	Sophie	8	Pack It Up	Soille San Diego Hebrew Day School	Bessler
963	Hammad	Tasmeya	7	Spices on Bacteria	Bright Horizon Academy	Naserelddin

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Junior Division ONLY – Product Testing/Consumer Sciences (cont'd)						
964	Henry	Sadie	8	Moisturizers for Swimmers	St. Didacus Parish School	Blickenstaff
965	Hussain	Daanya	7	Which Home Remedy is Better for Cholesterol?	Bright Horizon Academy	Nasereiddin
966	Johnson Shaikhvand	Kaylee Collette	7 7	Perfect Polish	St. Michael's School Poway	Poling
967	King	Angela	7	Helpful or Hurtful? The Study of EMF Defenders	Santa Fe Christian Schools	Culley
968	Magana	Paris	8	Comparing Glucose Levels in Homemade and Commercial Brand Smoothies	Chula Vista Middle	Saclauso-Caro
969	McKamey	Trey	8	Child Safety Locks	St. Didacus Parish School	Blickenstaff
970	Montejo Nasry	Rosy Margaret	7 7	Soaking Up Science	St. Peter the Apostle School	Jones
971	Naughton	Sasha	8	What Fabric is Affected the Most by Kool-Aid	St. Mary Star of the Sea School	Alonso
972	Nepomuceno	Lea	8	Different Percentages of I-ascorbic Acid Affecting the Percutaneous Absorption of Frozen Pig Skin Tissue	Wangenheim Middle	Mendibles
973	Newton	Kaylee-Grace	8	High End or Drug Store?	Farb Middle	Huntington
974	Nguyen	Joseph	7	Swim Caps: Latex or Silicon	Nazareth School	Reed
975	Noriega	Kristen	8	Premium or Great Value: Can You Tell the Difference?	Our Lady of Guadalupe Academy	Patton
976	Payne	Mercedes	7	Which Brand of Correction Tape is Best for Common Use?	Nazareth School	Reed
977	Prevost Zdanowski	Mason Jack	8 8	Using Low VOC Natural Paints and Sealants to Waterproof ECOR	The Rhoades School	Hunker
978	Romo	Araceli	8	Effects of Temperature on Fabric Fibers	Chula Vista Middle	Saclauso-Caro
979	Tadesse	Wegahta	7	Strongest Glue	St. Didacus Parish School	Blickenstaff
980	Usmani	Arissa	7	Homemade vs. Store Bought Detergents: Which Works Best with Fabrics?	Bright Horizon Academy	Nasereiddin
981	Walp	Michael	7	Which Surf Wax Grips the Best	Nazareth School	Reed
982	Willert	Frederick	8	Breaking Glass	Mount Helix Academy	Hudson
983	Wolter	Amy	7	A Comparison of Hand Warmers	Santa Fe Christian Schools	Culley
984	Zabrocki	Joey	7	Flex Tape vs. Duct Tape	All Hallows Academy	Humkey
985	Santos	Jaime	7	The Phone Drop Test	Corfman School	Leon

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SIXTH GRADE SHOWCASE

Sixth Grade Showcase -- Chemistry

1501	Burns Dunford	Leah Ava	6 6	Tempering Chocolate	Marston Middle	Holland
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Sixth Grade Showcase - Engineering: Electrical and Mechanical

1505	Cochran Robinson	Jade Lauren	6 6	Lemonade Machine	Marston Middle	Holland
1506	Larsen Durfee	Ty Keegan	6 6	Multi Purpose Catapult	Marston Middle	Holland
1507	Denny Wagoner	Samantha Chloe	6 6	The Green Robot	Marston Middle	Holland

Sixth Grade Showcase - Engineering: Energy and Transport

1510	Cota Llanos	Levi Alvaro	6 6	Hovercraft	Marston Middle	Holland
1511	Steward	Taylor	6	Solar Air Heater	Marston Middle	Holland
1512	De Soto Horstman	Logan Henry	6 6	The Invisible Car	Marston Middle	Holland
1513	Holland Reece	Honore' Justice	6 6	The Tesla Coil	Marston Middle	Holland

Sixth Grade Showcase - Environmental Sciences and Management

1515	Santos Sweat	Gabi Ayla	6 6	Soil Collecting Robot	Marston Middle	Holland
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Sixth Grade Showcase - Medicine and Health Sciences

1520	Synn	Melinda "Michi"	6	PMA Stimulated Differentiation of THP-1 Cells Into Macrophages and Dendritic Cells	Solana Pacific Elementary	Sung
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The Greater San Diego Science and Engineering Fair

Presents

Science Fair Family Day



Come join us for a day of Science and entertainment!

Sunday, March 17, 2019-10:00 am to 3:00 pm
All Day Fun and Games for the whole Family!

PRESENTATIONS, ACTIVITIES AND DEMONSTRATIONS

11 AM – 12 PM: **SAN DIEGO ZOO ANIMAL AMBASSADORS**

Zoo Educators will bring 4-5 Zoo Ambassadors to visit the science fair! Come join them for a closer look at these special zoo visitors!

12 PM – 1 PM: **ROBOTICS DEMONSTRATIONS**

Come see local high school robot residents perform feats of wonder! Meet the creators and learn how to control the robots!

ALL DAY:

CABRILLO NATIONAL MONUMENT

Learn about tide pool monitoring, invasive insects, and more! Engage with 3D bio models of tide pool organisms!

SCAVENGER HUNT

Think you know your way around our fair? Come find out and show us what you can discover!
(CANDY PRIZES GIVEN)

SCIENCE ACTIVITIES

Come make your own slime to take home; create unique bracelets from our UV beads; see a rainbow made from cabbage juice; experience density at work with our density tower phe-

Located at the Balboa Park Activity Center, 2145 Park Blvd., San Diego, CA 92101-4753

Visit our science fair gift shop where you will find T-shirts, gifts and more

Traffic and Parking Information for Judging Day
March 13, 2019

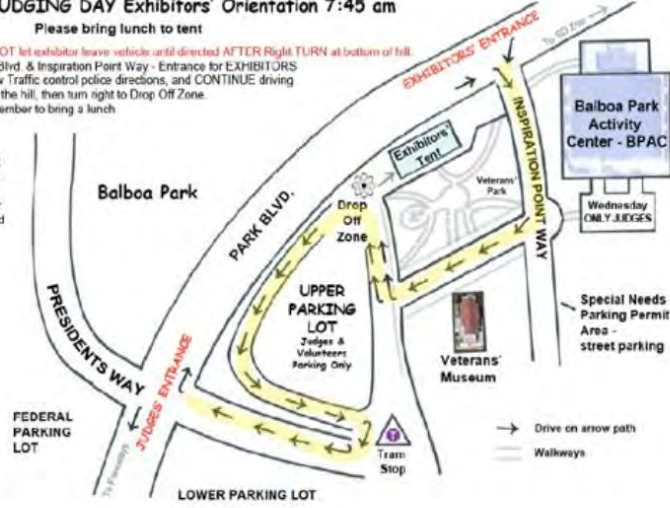
Morning Traffic Flow

EXHIBITORS' ENTRANCE - WEDNESDAY MORNING (arrive between 7:10 - 7:40 am)
JUDGING DAY Exhibitors' Orientation 7:45 am

Please bring lunch to tent

DO NOT let exhibitor leave vehicle until directed AFTER Right TURN at bottom of hill.
Park Blvd & Inspiration Point Way - Entrance for EXHIBITORS
Follow Traffic control police directions, and CONTINUE driving down the hill, then turn right to Drop Off Zone.
• Remember to bring a lunch

To facilitate student drop-off and safety, students need to bring a folding chair on Tuesday (labeled with their name).



Afternoon Traffic Flow

WEDNESDAY AFTERNOON - JUDGING DAY
PICK UP 2:45 pm

ENTER INTERSECTION OF PRESIDENTS WAY & PARK BLVD.

Drive to Lower Parking Lot & Wait. Lot usually clears by 3:25.

FEDERAL PARKING LOT (park here to meet exhibitors at tent)

